On the Compatibility of Autonomy and Relatedness

Holley S. Hodgins
Skidmore College

Richard Koestner
Neil Duncan
McGill University

The relation of autonomy to naturally occurring social interaction was investigated in two studies using a daily recording methodology. It was expected that autonomous functioning, as measured by the General Causality Orientations Scale, would be related to positive social experience. Study 1 examined college students' interactions with parents; Study 2 examined interactions across all relationships. Both studies showed that autonomy was significantly related to more positive and honest naturally occurring interaction, whereas control related to more defensive functioning.

Autonomy is sometimes characterized as antithetical to relatedness. For example, Murray (1938) suggested that autonomous people "look on marriage as a form of bondage" (p. 152). Developmental theorists frequently conceptualize the establishment of identity in adolescence as detachment from family (Blos, 1979; Bretherton, 1987; Damon, 1983; Douvan & Adelson, 1966; Peterson & Taylor, 1980; Schafer, 1973). In this view, a developmental decrease in closeness of relations to parents is postulated to be necessary for the establishment of autonomy. Consistent with the assumed dichotomy of autonomy and relatedness, theories emphasizing self-determination have been criticized for promoting narcissism and isolation (Lasch, 1978; Sampson, 1977; Smith, 1978). This reproach is based on the belief that self-determination necessarily undermines relatedness to others.

In contrast, others have postulated that continued attachment to parents is a healthy dimension of adolescent and adult life (Grotevant & Cooper, 1986; Hill & Holmbeck, 1986; Kenny, 1990; Kenny & Hart, 1992; Ryan, 1991; Youniss & Smollar, 1985). According to this view, autonomy and relatedness are not opposite ends of a bipolar continuum but, rather, are two central human needs that coexist throughout life.

These diametrically opposed views may result from the use of different definitions of autonomy. In considering autonomy, it is essential to distinguish between freedom *from* the governance of others, predicated on independence and nonreliance on others, and freedom *to* self-govern—that is, to make informed choices based on an awareness of one's own needs and values.

This distinction has recently been articulated by several theorists. For example, Hoffman (1984) differentiated between adolescents' *attitudinal independence* (defined as striving to be different from one's parents) and *conflictual independence* (defined as freedom from excessive guilt, anxiety, and anger in relation to one's parents). Similarly, Ryan and Lynch (1989) recently emphasized the importance of differentiating between independent nonreliance and autonomy when making predictions about adolescents' social adjustment. The results of both studies suggest that nonreliance on others is associated with maladjustment, whereas autonomous self-governance is related to more positive social adjustment.

Consistent with the above, Koestner and Losier (in press) distinguished between *reactive autonomy* (the tendency to prefer acting independently without influence from others) and *reflective autonomy* (the tendency to experience a sense of choice about one's behavior).

These authors showed that the two types of autonomy are uncorrelated, relate to the Big Five trait dimensions in different ways, and have divergent relations with mood and mood-regulation strategies. Another study showed that the two forms of autonomy have distinctive developmental origins and sequelae associated with them (Williams & Koestner, 1993). Both studies suggest that reflective autonomy is more likely than reactive autonomy to be associated with adaptive behavior, positive moods, and effective social functioning.

In sum, although both conceptions have been referred to as *autonomy*, reactive and reflective autonomy have different origins and implications for social relations. By its very nature, the independent nonreliance that defines reactive autonomy would be expected to preclude positive connection with others. The ability to autonomously self-govern, however, does not require that one avoid the influence of or closeness with others.

In this article, we propose that autonomy, when viewed as experiencing reflective self-determination about one's behavior, does not undermine but actually promotes connectedness and positivity in social experience. That is, college students who experience a sense of choice and behave in a self-determining manner will be capable of open and nondefensive interaction with parents and with peers. Reflective autonomy should be associated with more positive social interaction because the ability to autonomously self-govern does not require the absence of influence from others and is, therefore, not impeded by the possibility of influence that accompanies closeness.

Self-Determination Theory: Reflective Autonomy

Our conceptual framework for understanding reflective autonomy is provided by self-determination theory (Deci & Ryan, 1985b, 1991), which distinguishes between two types of volitional functioning: autonomous and controlled. Autonomous behaviors are initiated and regulated by choices that are based on an awareness of one's needs, feelings, and integrated goals. People who function autonomously seek out choice and experience events as sources of information for freely regulating their own behavior. Consistent with this, research has demonstrated that autonomy is associated with positive self-evaluation, high self-awareness, adaptive achievement behavior, and consistency between attitudes, traits, and behaviors (Deci & Ryan, 1985a; Koestner, Bernieri, & Zuckerman, 1992; Koestner & Zuckerman, in press; Scherhorn & Grunert, 1988; Vallerand, Blais, LaCouture, & Deci, 1987).

In contrast, controlled behaviors are determined by factors outside of an integrated self, such as reward structures in the environment or internally controlling imperatives indicating how one should behave. People who are highly control determined seek out external controls and tend to experience events as pressures that determine their behavior and feelings. Research indicates that the control orientation relates to a lack of self-awareness, a tendency to regulate social behavior on the basis of external rather than internal cues, and inconsistency between attitudes, traits, and behaviors (Deci & Ryan, 1985b; Koestner et al., 1992; Scherhorn & Grunert, 1988; Vallerand et al., 1987; Zuckerman, Gioioso, & Tellini, 1988).

We hypothesized that reflective autonomy should allow for more positive social relations with other people because interaction can be based on a sense of choice regarding one's own behavior. A person who experiences self-endorsement is not compelled to avoid the potential influence that accompanies close relatedness. Rather, a true sense of choice is not undermined by acknowledging or allowing the influence of others. Furthermore, the ability to function autonomously does not negate the innate human need for relatedness. Instead, the ability to self-govern autonomously should free a person to be closely connected to others without easily feeling threatened.

In contrast, external control was predicted to relate to more defensive interpersonal functioning. This would occur because high control is associated with the experience of pressure and tension. To the extent that people are sensitive to external contingencies, they may feel compelled to protect themselves from the possibility of coercion by avoiding closeness and openness with others.

Past studies examining intrinsic motivation for relationships are relevant to the relation of autonomy and relatedness because intrinsically motivated behavior is accompanied by a sense of self-determination. Consistent with our central thesis, past studies show a relation between intrinsic motivation for relationships and positive interpersonal outcomes in various relationships, including dating relationships (Rempel, Holmes, & Zanna, 1985; Seligman, Fazio, & Zanna, 1980), long-term marriages (Blais, Sabourin, Boucher, & Vallerand, 1990), and the relationships of elementary school children to parents and teachers (Ryan & Connell, 1989).

These studies show that more intrinsic motivation for being in a specific relationship is associated with more positive experience in that relationship. Extending this result, we propose that the experience of choice that accompanies autonomy as a general orientation (rather than motivation for one specific relationship) will lead to more positive relatedness. This should occur because the high self-awareness and lack of defensiveness of autonomous people should allow for interaction characterized by greater empathy and openness. Consistent with this, there is evidence that more autonomous individuals describe their social functioning in very positive

terms (Koestner & Losier, in press; Williams & Koestner, 1993) and are more generous when explaining others' behavior (Hodgins & Deci, 1994). The results suggest that more autonomous people may have an interpersonal stance characterized by positivity, warmth, and openness. This interpersonal approach should lead to positive social interaction.

Present Studies

The goal of this article is to show that a general orientation toward reflective autonomy is associated with better interpersonal experiences with parents and with peers. Although adolescent rebellion against parents is often viewed as developmentally appropriate to separate from parents and establish oneself among peers (Hoffman, 1984), the parent-child relationship clearly continues to be important throughout life (Grotevant & Cooper, 1986). Students who experience the choice that accompanies reflective autonomy should be free to enjoy a close relationship with parents and to draw on parents as a resource without having to avoid parental control.

Similarly, autonomous functioning should enable one to establish more positive connections with peers. This relation was expected because the feeling of choice should allow for greater warmth and openness toward others. Conversely, high control orientation was expected to relate to more defensive social functioning. To the extent that persons are vulnerable to controlling factors in the environment, they may feel compelled to avoid possible pressure that could occur from being close to others. People high in control orientation may, therefore, view interpersonal situations as threats to be defended against and may act as though to protect themselves. This defensive interpersonal stance should result in less pleasant and more distant interpersonal experiences. These predictions are examined in two studies of the naturally occurring social experience of college students. The hypothesis regarding the relation of autonomy and control to interaction with parents was tested in Study 1; the hypothesis regarding peer relations was examined in Study 2.

A daily event-recording strategy was used to assess interaction. Specifically, the Rochester Interaction Record (RIR; Wheeler & Nezlek, 1977) was used to assess subjects' ongoing social experience. This and similar naturalistic methodologies frequently have been used to avoid the pitfalls of global retrospective accounts.

STUDY 1

Method

Subjects. A total of 67 students (55 females, 12 males) at Skidmore College participated in partial fulfillment of a research requirement. All subjects lived in college dormitories and had a mean age of 18.3 years (range 17 to 21). Of the subjects, 54 (81%) were in their first semester, 9 were sophomores, the remaining 4 were juniors or seniors.

Description of family living arrangement. Of the subjects, 46 (69%) had lived with both parents before college, 17 (25%) had lived with just the mother, 3 had lived at boarding school, 1 had lived with her mother and stepfather, and 1 had lived with grandparents.

Procedure. Subjects attended a meeting at which the study was explained, the General Causality Orientation Scale (GCOS) was completed, and RIRs were distributed. Subjects were told the purpose was to examine interactions between students and parents; they were assured of confidentiality and assigned numbers to be used on all RIRs. All subjects were contacted by telephone several times and interviewed briefly; during the final call, they were scheduled for a meeting to return RIRs and complete a follow-up questionnaire.

Reflective autonomy: The GCOS. The GCOS (Deci & Ryan, 1985a) consists of three subscales measuring the three motivational orientations postulated to exist in each person: autonomy, control, and impersonal. Because the Impersonal subscale concerns nonvolitional behavior, it is not relevant to the current studies and will not be discussed further. The original GCOS contains 12 vignettes (36 items), each describing a situation the subject might be in. Each vignette has three possible behavioral responses, one representing each of the three motivational orientations. Subjects use 7-point Likert-type scales to rate how likely it is that they would respond in each of the three ways. The responses for each orientation are summed, resulting in three subscale scores representing the strength of the three motivational orientations. An example of a vignette and its items is as follows:

> When you and your friend are making plans for Saturday evening, it is likely that you would: (a) each make suggestions and then decide together on something that you both feel like doing [the autonomous response] or (b) talk your friend into doing what you want to do [the controlled response].

The Autonomy and Control subscales are unrelated ($r = .03$); females score somewhat higher on autonomy and males somewhat higher on control. All three subscales have demonstrated good internal reliability (alphas = .75 to .90) and test-retest reliability ($rs = .75$ to .85; Blustein, 1988; Deci & Ryan, 1985a; Vallerand et al., 1987). In Study 1, an expanded 17-vignette GCOS (51 items) was used (Ryan, 1989); reliabilities (Cronbach's alphas) were .87 and .83 for autonomy and control, respectively.

On the basis of past research, the GCOS Autonomy subscale appears an acceptable operationalization of our conception of reflective autonomy. For example, those high on GCOS autonomy show greater ego development, self-esteem, and self-actualization and lower self-derogation and less hostility (Deci & Ryan, 1985a), are more likely to support autonomy in children (Deci, Schwartz, Sheinman, & Ryan, 1981), show higher moral reasoning and are less likely to cheat (Lonky & Reihman, 1990), and show greater consistency between attitudes, traits, and behaviors (Koestner et al., 1992).

Reactive autonomy: Adjective Checklist (ACL) Autonomy subscale. Following Koestner & Losier (in press), reactive autonomy was operationalized as scores on the ACL Autonomy subscale (Gough & Heilbrun, 1983). The ACL Autonomy subscale contains 44 adjectives; subjects are asked to check the adjectives they consider self-descriptive. Positively scored adjectives include adventurous, aggressive, assertive, confident, independent, individualistic, opinionated, self-confident, and unconventional; examples of reverse-scored adjectives include cautious, cooperative, dependent, meek, suggestible, and timid.

In past research, the ACL Autonomy subscale has been related to disagreeableness, extraversion, and openness (Piedmont, McCrae, & Costa, 1991), poor social adjustment, a greater number of aggressive acts, and the developmental correlates of greater child disobedience and parental use of power-assertive techniques (Koestner & Losier, in press). Furthermore, ACL Autonomy subscale scores relate to dropping out of college (Heilbrun, 1965), satisfaction with careers encouraging self-direction (Arvey, Dewhirst, & Boling, 1976), and dissatisfaction with work that requires teamwork (O'Reilly, Chatman, & Caldwell, 1991). Taken together, the results suggest that ACL Autonomy subscale appraises independence, isolation, and nonreliance on others. This is consistent with our conceptualization of reactive autonomy and supports the use of ACL autonomy as an appropriate operationalization.

Social interaction measure: The RIR. A modified RIR (Wheeler & Nezlek, 1977; for a review, see Wheeler & Reis, 1991) was used to assess interactions. Subjects were asked to record every interaction with a parent that lasted 10 min or longer for 3 weeks; the 3-week period included Parents' Weekend and midterm break. They were asked to complete the RIR immediately following the interaction if possible; when not practical, they were asked to complete the RIR later in the same day. The mean number of RIRs during 3 weeks was 15.6 (median = 12; range = 5 to 73). Of the subjects, 91% (n = 61) reported in-person RIRs with parents; 100% reported telephone RIRs.

The information recorded on the RIR included the date, the length of interaction, the number of other interactants, the relationship to each interactant (mother, father, stepmother, stepfather, other parent figure), a rating of self- and other-honesty, and six qualitative ratings of the interaction. The six ratings included 7-point Likert-type scales measuring initiation (other-initiated vs. self-initiated), influence (other-influenced vs. self-influenced), self-disclosure (very little vs. a great deal), other-disclosure (very little vs. a great deal), quality (unpleasant vs. pleasant), and felt esteem (felt bad vs. good about self).

Subjects were given specific definitions for each subscale. For example, initiation was defined as reflecting "who made the interaction happen" and could be judged by such things as asking someone to meet you, starting a conversation, or making a telephone call. Disclosure was explained as "the degree to which the information that you (the other) revealed was personal or private"; subjects were told not to confuse disclosure with the amount of speaking. Examples of RIR use were given and discussed; in addition, written instructions including subscale definitions were given for later reference.

The RIR has demonstrated good reliability in three previous samples that included roommate pairs; intraclass correlations between roommates' reports of the number of dyadic roommate interactions ranged from .67 to .85 (Hodgins & Zuckerman, 1990; Wheeler & Nezlek, 1977, 2 samples). Hence past subjects have used the RIR to record interactions in a consistent manner.

As in previous studies, subjects completed a follow-up questionnaire about RIR-keeping. They reported little difficulty recording (mean = 2.55 on scales ranging from 1 = *No difficulty* to 7 = *Very difficult*), they felt RIRs were quite accurate (mean = 5.63 on scales ranging from 1 = *Not accurate at all* to 7 = *Very accurate*), they reported little interference of RIRs on interaction (mean = 1.57 on scales ranging from 1 = *Not at all* to 7 = *Very much*), and they reported that most interactions had been recorded (mean = 89.8%, range = 60% to 100%). In sum, subjects reported feeling positive about RIRs.

Summarizing RIR data. RIRs were used to create profiles of subjects' interaction; each profile included the variables of mean length, number of RIRs, and rating on each dimension. Separate profiles were created for interactions including mother, father, and for all interactions. Six subjects reported interactions with a stepparent; preliminary analyses showed no differences between parent and stepparent interactions, all *F*s < 1.1. Hence stepparent interactions were included in the parent profile.

Consistent with a previous interaction study (Hodgins & Zuckerman, 1990), the six qualitative RIR ratings were expected to reflect underlying dimensions of emotional sharing, interaction tone, and influence. Factor analysis

was therefore performed on the six qualitative dimensions rated on the RIR.[1] The following three factors emerged: (a) a Disclosure factor, with loadings from self- and other-disclosure (mean loading = .89, all cross-loadings < .24); (b) an Interaction Tone factor, with loadings from felt esteem and pleasantness (mean loading = .94, all cross-loadings < .14); and (c) an Influence factor, with loadings from initiation and influence (mean loading = .83, all cross-loadings < .10). Three factors were created by averaging the items that loaded high on each factor; for all factors, higher scores indicate more of the dimension. The mean correlations between the factors were as follows: Tone and Disclosure, .22; Tone and Influence, .30; and Disclosure and Influence, .09. All subsequent analyses used the three factors as dependent variables reflecting interaction quality.[2]

Results and Discussion

Relation of GCOS subscales and ACL subscale. To assess the relation between GCOS (reflective) autonomy, GCOS control, and ACL (reactive) autonomy, the three subscales were correlated. Consistent with past findings, GCOS autonomy and control were unrelated, $r = -.01$. Consistent with Koestner & Losier (in press), ACL and GCOS autonomy were unrelated, $r = -.02$, but ACL was positively related to GCOS control, $r = .27$, $p < .03$. This pattern suggests that although reactive autonomy is very different from reflective autonomy, it may share some of the sensitivity to external contingencies that defines external control.

Autonomy and interaction with parent. The three RIR qualitative factors and honesty ratings were correlated with the GCOS and ACL scales. As seen in Table 1, GCOS autonomy was significantly positively related to interaction tone, self-honesty, and other-honesty. Hence college students who are higher on reflective autonomy report that interactions with parents are more pleasant, report feeling higher esteem during interactions, and report higher levels of self-honesty and parents' honesty.

In contrast, GCOS control and ACL autonomy generally were unrelated to quality of parent interaction. One correlation approached significance; subjects higher on ACL autonomy tended to rate parents' honesty lower, $r = -.21$, $p < .08$. This apparent lack of trust is consistent with a defensive interpersonal stance.

One further set of analyses was performed to examine the expected pattern of defensiveness by subjects with a high control orientation. We thought that a defensive stance toward parents might be especially apparent when the parent telephoned or approached the student. Parental initiation might induce defensiveness to the extent that it engendered a feeling of coercion or lack of choice in the student.

TABLE 1: Correlations of Rochester Interaction Record (RIR) Indexes With the Subscales of the General Causality Orientation Scale (GCOS) and the Adjective Checklist (ACL), Study 1

RIR Indexes	GCOS Autonomy	GCOS Control	ACL Autonomy
Qualitative factors			
Interaction Tone	.49**	−.08	−.11
Disclosure	.15	−.08	−.09
Influence	−.07	.18	−.19
Self-honesty	.60**	−.06	−.06
Other-honesty	.54**	−.03	−.21*

*$p < .09$. ** $p < .001$.

Accordingly, on the basis of the initiation rating (self-initiated vs. other-initiated), two additional RIR profiles were created: student- and parent-initiated interactions. Specifically, RIRs with initiation ratings greater than the midpoint of 4 were designated as student initiated; those below 4 were designated parent initiated. Of the RIRs, 32% ($n = 333$) were mutually initiated (i.e., initiation = 4) and were eliminated from this analysis. These RIR profiles were correlated with GCOS and ACL subscales.[3]

As seen in Table 2, GCOS autonomy showed similar patterns of correlation in student-initiated and parent-initiated interactions; GCOS autonomy was associated with positive tone and self- and other-honesty. In contrast, the relation of control orientation to social experience differed according to who initiated contact. Control was not significantly correlated with quality of interaction when the student initiated; however, when parents initiated, control was negatively correlated with tone and marginally negatively correlated with self-honesty. Standardized scores were calculated to test the significance of the difference between the effect sizes of the correlations of student- and parent-initiated RIRs (Rosenthal & Rosnow, 1984, pp. 372-373). The z scores indicate that, in comparison to student-initiated RIRs, high-control students rate parent-initiated interaction lower in tone, lower in self-honesty, and marginally lower in disclosure.

The pattern suggests that highly control-oriented college students respond defensively when parents initiate interaction. They find interactions unpleasant, feel lower esteem, are less honest, and tend to disclose less when parents telephone or seek conversation compared with when they approach parents themselves. The defensive behavior may result from feeling pressured or coerced; perhaps highly control-oriented students have a lower threshold for experiencing threat because they lack a sense of self-determination. The simple act of parental initiation may engender a feeling of lacking choice.

Of course, college students use a long relationship history with parents in predicting their present interac-

TABLE 2: Pearson Correlations of Rochester Interaction Record (RIR) Indexes With the Subscales of the General Causality Orientation Scale (GCOS) and the Adjective Checklist (ACL), Separately for Student- and Parent-Initiated Interaction, Study 1

RIR Indexes	GCOS Autonomy			GCOS Control			ACL Autonomy		
	Student	Parent	z Score	Student	Parent	z Score	Student	Parent	z Score
Qualitative factors									
Interaction Tone	.31***	.34***	−0.18	.08	−.25**	1.84**	−.01	−.05	0.22
Disclosure	.11	−.05	0.88	.06	−.18	1.33*	−.01	−.12	0.61
Self-honesty	.53†	.28**	1.66**	.11	−.22*	1.84**	.05	−.13	0.99
Other-honesty	.44†	.36***	0.52	.06	−.05	0.60	−.18	−.28**	0.59

NOTE: The z score tests the significance of the difference between two correlations based on ns of 66 and 61 for student- and parent-initiated interactions, respectively.
*$p < .09$. **$p < .05$. ***$p < .01$. †$p < .001$.

tion. In a sense, therefore, defensiveness may seem appropriate to the extent the student has experienced past intrusiveness from parents. Indeed, we would speculate that parents were a major influence in the development of the adolescent's present motivational orientation.

One correlation reached significance for the ACL Autonomy subscale; students high on reactive autonomy distrust parental honesty when the parent initiates contact. It is interesting that although reactive subjects distrust their parents' honesty, there is no indication of an emotional response (i.e., in tone) or behavioral response (i.e., in self-honesty or self-disclosure) to parents' perceived dishonesty. Perhaps subjects high in reactive autonomy have coped with dishonesty by not relying on parents or by "writing them off." In the context of parental dishonesty, this type of independence presumably would be quite adaptive. However, to the extent that habitual nonreliance becomes the norm in relationships, it may preclude the formation of intimate attachments by subjects high in reactive autonomy.

STUDY 2

Study 1 suggests that reactive and reflective autonomy are very different dimensions and that reflective autonomy is associated with positive relatedness with parents, whereas control orientation is associated with defensiveness toward parents. We were interested in extending the result by examining many relationships. The purpose of Study 2 was to generalize the compatibility of reflective autonomy and positive relatedness in the student-parent relationship to social relatedness more broadly defined. Subjects were older summer students living off campus, who therefore inhabited more diverse social spheres. The same naturalistic recording methodology was used, but subjects recorded all interactions, resulting in a larger number of RIRs (1,042 in Study 1 vs. 3,308 in Study 2). Consequently, Study 2 contained adequate power to perform a within-subjects analysis of social experience that addressed interesting intrasubject processes.

Method

Subjects. A total of 86 (52 female, 34 male) summer students at McGill University were recruited through advertisements. Age ranged from 8 to 44 years (mean = 22.4); 98% of subjects lived off campus. Each subject was paid $40 for participation.

Procedure. The procedure was identical to Study 1 except subjects were asked to complete one RIR for every interaction with any person that lasted 10 min or longer during a 7-day period.

The GCOS. A 9-vignette (27-item) GCOS was used that included all vignettes of an interpersonal nature from the extended GCOS. This was done specifically to assess motivational orientation for relatedness. Although internal consistencies were somewhat lower than the full scale, they were within an acceptable range (alphas = .71 and .65 for autonomy and control, respectively).

The RIR. The RIR was identical to that in Study 1 with one exception: Instead of circling type of parent, subjects recorded the number of male and female interactants and the closeness of the relationship. The number of RIRs ranged from 5 to 90 (mean = 38.5, mean per day = 5.5). This is slightly lower than the usual 6 per day reported in RIR studies in which subjects recorded all interactions. The difference could be due to different living situations; in all previously published RIR studies, subjects lived in dormitories in which there are constant interaction partners. Most current subjects lived off campus, either with friends or alone.

On follow-up, subjects reported little difficulty recording RIRs (mean = 2.81 on scales ranging from 1 = *None* to 7 = *Very much*), high accuracy (mean = 2.91 on scales ranging from 1 = *Very accurate* to 7 = *Very inaccurate*), and little interference of RIRs (mean = 1.92 on scales ranging from 1 = *None* to 7 = *Very much*), and they reported that most interactions had been recorded (mean = 89%, range = 50% to 100%).

Factor analysis revealed the identical three factors as in Study 1; three factors (Disclosure, Tone, Influence) were created as in Study 1.

Results and Discussion

Two types of analyses were performed. First, between-subjects analyses examined the overall relation of the GCOS and RIRs. Second, because of the large number of repeated measurements over time, it was possible to perform a more finely tuned within-subjects analysis of interaction quality. This approach allowed us to address some interesting questions about intrasubject processes.

INTERACTION QUANTITY

The relation of GCOS and RIR quantity was examined by correlating the number of RIRs with the GCOS. Autonomy was positively related to the number of RIRs, $r = .21$, $p < .05$; control was unrelated, $r = .01$.[4] Although this relation was not predicted, it is consistent with our expectation that autonomy is associated with better relatedness. If autonomous individuals enjoy social interaction, they may be particularly likely to initiate; it also is possible that autonomous people are sought by others.

INTERACTION QUALITY—BETWEEN-SUBJECTS ANALYSES

To examine the relation of GCOS to interaction quality, all RIR indexes were correlated with the GCOS. As seen in Table 3, autonomy related to disclosure, interaction tone, and self- and other-honesty. Thus people higher on autonomy report greater self- and other-disclosure, experience interactions as more pleasant, feel higher esteem during interactions, report that they have been more honest, and believe others were more honest.

In contrast, control showed a relation only to ratings of influence. People high on GCOS control rate higher self-initiation and self-influence. This was not predicted but is intriguing because control refers not merely to need for control but to a sensitivity to external contingencies. It is possible that power issues become quite salient for subjects who lack a sense of self-determination about their own behavior. This explanation, of course, was not addressed here.

INTERACTION QUALITY—WITHIN-SUBJECTS ANALYSES

Data analytic procedure. To provide a richer perspective on the relation between motivational orientation and interpersonal interaction, we employed a procedure in which within-subjects correlations were used as variables (for a discussion, see Michela, 1990). Within-subjects correlations were obtained for each subject by correlating that subject's RIR indexes; the resultant correlations reflect intrasubject processes. Specifically, the RIR factors (Disclosure, Tone, and Influence) were correlated with each other and with four other RIR indexes: (a)

TABLE 3: Between-Subjects Analysis: Pearson Correlations of Rochester Interaction Record (RIR) Indexes With the General Causality Orientation Scale (GCOS) Subscales, Study 2

RIR Indexes	GCOS Autonomy	GCOS Control
Qualitative factors		
Interaction Tone	.48**	.10
Disclosure	.29**	.11
Influence	.00	.23*
Relationship closeness	.08	.03
Self-honesty	.44**	−.02
Other-honesty	.41**	.01

*$p < .05$. **$p < .01$.

closeness of the relationship with the other interactant(s), (b) self-honesty, (c) other-honesty, and (d) the discrepancy in honesty between the self and other. The honesty discrepancy score was calculated by subtracting other-honesty from self-honesty; hence, positive scores indicate greater self-honesty, and negative numbers indicate greater other-honesty. In addition, a within-subjects correlation was calculated between the ratings of self- and other-disclosure (these two scales were originally combined to form the Disclosure factor).

A Fisher's z transformation was performed on all within-subjects correlations to standardize the variances of the correlations and to allow the use of the within-subjects correlations as variables (Rosenthal & Rosnow, 1984). These transformed within-subjects variables were correlated with the GCOS; these correlations are presented in Table 4. Results are discussed separately below according to their pertinence for motivational orientation and disclosure, tone, and closeness, respectively.

Disclosure. We showed earlier that autonomous people disclose more in everyday interactions. However, high disclosure is not necessarily positive; rather, it must be appropriate to contribute to positive social experience. It was postulated that disclosure is most appropriate (a) in close relationships, (b) when both people are honest, and (c) when disclosure is mutual. Disclosure was examined as a function of these three dimensions.

First, regarding relationship closeness, autonomy was positively related to the within-subjects correlation between closeness and disclosure, $r = .25$, $p < .05$. Thus subjects who were more autonomous disclosed more in interactions with closer relationship others.

Second, autonomy was negatively related to the within-subjects correlation between honesty discrepancy and disclosure, $r = −.33$, $p < .01$. Recall that positive discrepancy scores indicate greater self-honesty. Thus the negative correlation indicates that subjects higher in autonomy disclosed less when they perceived the other person was less honest. If another person is not honest, it is adaptive simply not to disclose; a dishonest person

TABLE 4: Within-Subjects Analysis: Correlations Between Within-Subject Variables and the General Causality Orientation Scale Subscales, Study 2

	Autonomy	Control
Disclosure with		
Interaction tone	.07	-.24**
Influence	-.03	.02
Closeness	.25**	.00
Self-honesty	-.11	-.21*
Other-honesty	.07	-.24**
Honesty discrepancy	-.33***	.05
Self- with other-disclosure	.23**	.04
Interaction tone with		
Influence	-.09	.05
Closeness	.09	-.14
Self-honesty	-.14	-.22**
Other-honesty	.13	-.31***
Honesty discrepancy	-.21*	.08
Closeness with		
Self-honesty	-.03	-.19*
Other-honesty	.16	-.19*
Honesty discrepancy	-.26**	-.04

*p < .08. **p < .05. ***p < .01.

should not be trusted with disclosure. This is the pattern associated with high autonomy and suggests discriminating disclosure.

Third, autonomy was positively related to the within-subjects correlation between self- and other-disclosure, r = .23, p < .05. This indicates that for subjects higher in autonomy, self-disclosure was related closely to the amount of disclosure from the other person. Hence autonomy is associated with greater mutuality of disclosure.

Taken together, the profile of disclosure by highly autonomous individuals is an adaptive one. Autonomous people disclose more but specifically in socially appropriate ways—that is, with people who are close, when they perceive others are honest, and with others who are also disclosing. Past research has recognized the importance of intimacy for well-being (Reis & Shaver, 1988) and has shown selective disclosure to be a hallmark of the capacity for intimacy (Prager, 1986). The current results suggest that autonomy is associated with the ability to allow the opportunity for intimacy, while reducing interpersonal risk by disclosing selectively.

Tone. We expected that subjects high in autonomy and control orientations would experience interactions as positive for different reasons. Hence we examined the aspects predicting positive tone; the correlations of tone with other RIR indexes are relevant here. As seen in Table 4, for high-control subjects, tone was negatively related to disclosure, r = -.24, p < .05, self-honesty, r = -.22, p < .05, and other-honesty, r = -.31, p < .01. Thus subjects high in control orientation felt lower esteem

and rated interactions as less pleasant when there was more disclosure and honesty.

In contrast, for autonomy, tone only related to honesty discrepancy, although it was marginally significant, r = -.21, p < .09. This indicates that when high-autonomy subjects were not being as honest as the other person, they tended to feel lower self-esteem and to rate the interaction as less pleasant. Hence the only dimension that predicted tone for high-autonomy individuals was their own failure to be as honest as the other.

Importantly, this result lends support to self-determination theory: The experience of interaction for high-autonomy subjects relates to their own behavior, not the behavior of others. Thus the feelings of autonomous people are determined by their own choices rather than by external events or persons. In contrast, for high-control subjects, tone related to the behavior of others; high control is associated with allowing others to determine one's feelings instead of being self-determining about experiencing events.

Closeness. Earlier results showed that high-autonomy subjects experienced more honesty in interaction; we examined whether honesty was moderated by relationship closeness. We expected that high-autonomy subjects would not be selectively honest with close others but would selectively trust the honesty of close others. The relevant variables are the within-subjects correlations between closeness and self-honesty, other-honesty, and honesty discrepancy (see bottom of Table 4). It can be seen that autonomy was unrelated to the within-subjects variables of closeness with self- and other-honesty but related negatively to the variable between closeness and honesty discrepancy, r = -.26, p < .05. Hence, although high-autonomy subjects are more honest in interaction (see Table 3), there is no evidence that this honesty is selective with close-relationship others. High-autonomy individuals apparently are honest consistently in all relationships.

There is evidence for selective trust in the honesty of others, however. In situations in which high-autonomy subjects perceived an honesty discrepancy with greater self-honesty, the other person was someone who was less close. Stated differently, more autonomous subjects felt greater trust in the honesty of people they were closer to. Similar to disclosure, being selective with trust is an adaptive interpersonal approach.

In contrast to autonomy, control was marginally negatively related to the variables of closeness with self-honesty and other-honesty, p < .08. Although it only approached significance, this is an intriguing result indicating that high-control subjects are selectively honest: They are less honest in close relationships than in distant relationships.

In sum, strikingly different profiles of social experience emerge for high-autonomy and high-control subjects. The greater disclosure and honesty of more autonomous subjects suggest an interpersonal stance of openness, which, according to Rogers (1980), is a landmark of a self-actualizing person. This openness is not naiveté, however. More autonomous subjects showed an adaptive discrimination in disclosure and trusting others. Hence the openness that allows for intimacy is balanced by a social appropriateness that probably protects the self from vulnerability in potentially painful situations.

In contrast, people high in control orientation show discomfort at openness with others: High-control subjects found it unpleasant and felt badly about themselves when interactions were characterized by high disclosure and honesty. Furthermore, high-control subjects tended to rate honesty lower in interactions with close-relationship others. The results support our thesis that the tendency to be motivated by factors external to the self relates to defensiveness. Ryan (1991) explained the avoidance of relatedness as a defensive response used by externally controlled persons to preserve the self. Similarly, Gruen (1988) suggested that a history of impingement on the self by intrusive others or social norms leads to an (admirable) fight to maintain autonomy. One way to guard against further infringement is to avoid being honest with oneself and others about feelings. Unfortunately, the cost of the fight for self-preservation may be the opportunity for closeness and intimacy.

GENERAL DISCUSSION

In sum, the studies support our position that autonomy neither negates nor conflicts with the human need for relatedness (for a similar view, see Jordan, Kaplan, Miller, Stiver, & Surey, 1991). Rather, it allows for more open and honest interpersonal experience. Our demonstration of the compatibility of autonomy and relatedness is based on a positive definition of autonomy (freedom to act in a self-determining way) and must be differentiated from a negative definition (based on freedom from others). The compatibility of autonomy and relatedness is consistent with the assumption of self-determination theory that both are basic human needs. One is not required to choose between satisfying one's need for autonomy and one's need for relatedness; fulfilling one appears to heighten the probability that the second will also be fulfilled.

It is important to note that the causal direction of this relation is not addressed by the current studies. Furthermore, it is reasonable to speculate that causation could occur in both directions. That is, being autonomous may allow for better social experience; conversely, interper-sonal experiences could enhance or diminish one's ability to behave autonomously.

Importantly, the results are not from a laboratory but represent naturally occurring interaction. Consequently, external validity is very high. Furthermore, similar patterns occurred in the unique student-parent relationship during the transition to college and, more broadly, in interactions of young adults in the community. The consistency of results in the two studies increases our confidence in the generalizability of the compatibility of autonomy and relatedness in everyday experience. Moreover, it suggests that the autonomous students in Study 1 were not simply social misfits among peers and overly connected to parents. Autonomous people also moved easily in broader social contexts. In adolescence, as in other life stages, one does not need to choose between being closely related to parents or to peers; autonomy allows for good social adjustment spanning both relationships.

One might argue that an alternative explanation for the current findings is that autonomy reflects a social desirability reporting bias (e.g., see Schlenker & Weigold, 1990). In addition to the lack of relation between the GCOS and Marlowe-Crowne Social Desirability Scale (Deci & Ryan, 1985a), there are two reasons for believing this criticism is unfounded. First, autonomy did not show overall positive relations with every dimension of interaction, suggesting that high-autonomy subjects do not merely view events in an undiscriminatingly positive way. There is no reason to believe that a social desirability bias would be selective in ways that also are theoretically meaningful for self-determination. An even more compelling argument, however, is provided by the pattern of intrasubject processes shown by within-subjects analyses in Study 2. For example, although autonomous subjects rated higher disclosure across all interactions during the week, within-subjects analyses showed that more autonomous subjects disclosed in selective and socially appropriate ways. It is unlikely that a socially desirable response set could have resulted in such a finely nuanced conditional pattern of reporting about self-disclosure.

Another related criticism is that the GCOS Autonomy subscale merely measures competent functioning. We believe that the GCOS assesses the ability to behave in a self-determined manner, which, in turn, relates to adaptive functioning. This is supported by evidence for construct validity presented earlier and by an aspect of the within-subjects analysis. Specifically, experience of positive tone was predicted by one's own behavior for high-autonomy subjects but by others' behavior for high-control subjects. This pattern is consistent with the theoretical constructs of self-determination and control;

it is not explained by a global and atheoretical ability to "function adaptively."

These studies provide a distinct contribution because interaction is measured in a way that portrays its complexities and avoids a one-time self-report. A limitation exists in that the measure is, nonetheless, a self-report. It will be important to see whether the relation of autonomy and social experience is corroborated by other behavioral measures and by peer ratings.

NOTES

1. The RIR self- and other-honesty ratings were not included in the factor analysis of RIR quality because these ratings were added to the study to assess the specific dimension of honesty; this was conceptualized as a separate dimension from overall interaction quality.

2. Identical relations of GCOS and interaction were found for mother RIR profiles, father RIR profiles, and all parent profiles. Hence all results are reported for profiles that include all parent interactions.

3. The RIR influence factor was not included in Table 2 because the influence factor included the rating scale of initiation, which was used in defining interactions as either student or parent initiated.

4. In Study 1, the correlations of the number of RIRs with GCOS autonomy, GCOS control, and ACL autonomy were all nonsignificant; rs were $-.02$, $-.17$, and $-.12$, respectively.

REFERENCES

Arvey, R. D., Dewhirst, H. D., & Boling, J. C. (1976). Relationships between goal clarity, participation in goal setting, and personality characteristics on job satisfaction in a scientific organization. *Journal of Applied Psychology, 61,* 103-105.

Blais, M. R., Sabourin, S., Boucher, C., & Vallerand, R. J. (1990). Toward a motivational model of couple happiness. *Journal of Personality and Social Psychology, 59,* 1021-1031.

Blos, P. (1979). *The adolescent passage.* New York: International Universities Press.

Blustein, D. L. (1988). The relationship between motivational processes and career exploration. *Journal of Vocational Behavior, 32,* 345-357.

Bretherton, I. (1987). New perspectives on attachment relations: Security, communication and internal working models. In J. Osofsky (Ed.), *Handbook of infant development* (pp. 1061-1100). New York: John Wiley.

Damon, W. (1983). *Social and personality development: Infancy through adolescence.* New York: W. W. Norton.

Deci, E. L., & Ryan, R. M. (1985a). The General Causality Orientations Scale: Self-determination in personality. *Journal of Research in Personality, 19,* 109-134.

Deci, E. L., & Ryan, R. M. (1985b). *Intrinsic motivation and self-determination in human behavior.* New York: Plenum.

Deci, E. L., & Ryan, R. M. (1991). A motivational approach to self: Integration in personality. In R. Dienstbier (Ed.), *Nebraska Symposium on Motivation: Vol. 38. Perspectives on motivation* (pp. 237-288). Lincoln: University of Nebraska Press.

Deci, E. L., Schwartz, A. J., Sheinman, L., & Ryan, R. M. (1981). An instrument to assess adults' orientations toward control versus autonomy with children. *Journal of Educational Psychology, 73,* 642-650.

Douvan, E., & Adelson, J. (1966). *The adolescent experience.* New York: John Wiley.

Gough, H., & Heilbrun, A. L. (1983). *The revised Adjective Checklist manual.* Palo Alto, CA: Consulting Psychologists Press.

Grotevant, H. D., & Cooper, C. R. (1986). Individuation in family relationships. *Human Development, 29,* 82-100.

Gruen, A. (1988). *The betrayal of the self: The fear of autonomy in men and women.* New York: Grove.

Heilbrun, A. B. (1965). Personality factors in college dropout. *Journal of Applied Psychology, 49,* 1-7.

Hill, J. P., & Holmbeck, G. N. (1986). Attachment and autonomy during adolescence. *Annals of Child Development, 3,* 145-189.

Hodgins, H. S., & Deci, E. L. (1994). *Generosity toward others: The influence of causality orientations on attributions.* Manuscript submitted for publication.

Hodgins, H. S., & Zuckerman, M. (1990). The effect of nonverbal sensitivity on social interaction. *Journal of Nonverbal Behavior, 14,* 155-170.

Hoffman, J. A. (1984). Psychological separation of late adolescents from their parents. *Journal of Counseling Psychology, 31,* 170-178.

Jordan, J. V., Kaplan, A. G., Miller, J. B., Stiver, I. P., & Surrey, J. L. (1991). *Women's growth in connection: Writings from The Stone Center.* New York: Guilford.

Kenny, M. E. (1990). College seniors' perceptions of parental attachments: The value and stability of family ties. *Journal of College Student Development, 31,* 39-46.

Kenny, M. E., & Hart, K. (1992). Relationship between parental attachment and eating disorders in an inpatient and a college sample. *Journal of Counseling Psychology, 39,* 521-526.

Koestner, R., Bernieri, F., & Zuckerman, M. (1992). Self-regulation and consistency between attitudes, traits and behaviors. *Personality and Social Psychology Bulletin, 18,* 52-59.

Koestner, R., & Losier, G. F. (in press). Distinguishing reactive and reflective forms of autonomy. *Journal of Personality.*

Koestner, R., & Zuckerman, M. (in press). Causality orientations, failure and achievement. *Journal of Personality.*

Lasch, C. (1978). *The culture of narcissism: American life in an age of diminishing expectations.* New York: W. W. Norton.

Lonky, E., & Reihman, J. M. (1990). *Self-regulation and moral reasoning as mediators of moral behavior.* Unpublished manuscript, Department of Psychology, State University of New York at Oswego.

Michela, J. L. (1990). Within-person correlational design and analysis. In C. Hendrick & M. S. Clark (Eds.), *Research methods in personality and social psychology* (pp. 279-311). Newbury Park, CA: Sage.

Murray, H. A. (1938). *Explorations in personality.* New York: Oxford.

O'Reilly, C. A., Chatman, J., & Caldwell, D. F. (1991). People and organizational culture: A profile comparison approach to assessing organizational fit. *Academy of Management Journal, 4,* 487-516.

Peterson, A. C., & Taylor, B. (1980). The biological approach to adolescence: Biological change and psychological adaptation. In J. Adelson (Ed.), *Handbook of adolescent psychology* (pp. 117-155). New York: John Wiley.

Piedmont, R. L., McCrae, R. R., & Costa, P. T., Jr. (1991). Adjective Checklist scales and the five-factor model. *Journal of Personality and Social Psychology, 60,* 630-637.

Prager, K. J. (1986). Intimacy status: Its relationship to locus of control, self-disclosure, and anxiety in adults. *Personality and Social Psychology Bulletin, 12,* 91-109.

Reis, H. T., & Shaver, P. (1988). Intimacy as an interpersonal process. In S. Duck (Ed.), *Handbook of personal relationships: Theory, relationships and interventions* (pp. 367-390). Chichester, UK: Wiley.

Rempel, J. K., Holmes, J. G., & Zanna, M. P. (1985). Trust in close relationships. *Journal of Personality and Social Psychology, 49,* 95-112.

Rogers, C. R. (1980). *A way of being.* Boston: Houghton Mifflin.

Rosenthal, R., & Rosnow, R. L. (1984). *Essentials of behavioral research: Methods and data analysis.* New York: McGraw-Hill.

Ryan, R. M. (1989). *The revised 17-item General Causality Orientations Scale.* Unpublished manuscript, Department of Psychology, University of Rochester, Rochester, New York.

Ryan, R. M. (1991). The nature of the self in autonomy and relatedness. In J. Strauss & G. R. Goethals (Eds.), *The self: Interdisciplinary approaches* (pp. 224-225). New York: Springer-Verlag.

Ryan, R. M., & Connell, J. P. (1989). Perceived locus of causality and internalization: Examining reasons for acting in two domains. *Journal of Personality and Social Psychology, 57,* 749-761.

Ryan, R. M., & Lynch, J. H. (1989). Emotional autonomy versus detachment: Revisiting the vicissitudes of adolescence and young adulthood. *Child Development, 60,* 340-356.

Sampson, E. E. (1977). Psychology and the American ideal. *Journal of Personality and Social Psychology, 35,* 767-782.

Schafer, R. (1973). Concepts of self and identity and the experience of separation-individuation in adolescence. *Psychoanalytic Quarterly, 42,* 42-59.

Scherhorn, G., & Grunert, S. C. (1988). Using the causality orientations concept in consumer behavior research. *Journal of Consumer Psychology, 13,* 33-39.

Schlenker, B. R., & Weigold, M. F. (1990). Self-consciousness and self-presentation: Being autonomous versus appearing autonomous. *Journal of Personality and Social Psychology, 59,* 820-828.

Seligman, C., Fazio, R. H., & Zanna, M. P. (1980). Effects of salience of extrinsic rewards on liking and loving. *Journal of Personality and Social Psychology, 38,* 453-460.

Smith, M. B. (1978). Perspectives on selfhood. *American Psychologist, 33,* 1053-1063.

Vallerand, R. J., Blais, M. R., LaCouture, Y., & Deci, E. (1987). The General Causality Orientations Scale: The Canadian French version of the General Causality Orientations Scale. *Canadian Journal of Behavioural Science, 19,* 1-15.

Wheeler, L., & Nezlek, J. (1977). Sex differences in social participation. *Journal of Personality and Social Psychology, 35,* 742-754.

Wheeler, L., & Reis, H. T. (1991). Self-recording of events in everyday life. *Journal of Personality, 59,* 339-354.

Williams, M., & Koestner, R. (1993, August). *Developmental origins and sequelae of reactive and reflective autonomy.* Paper presented at the meeting of the Canadian Psychological Association, Montreal, Quebec.

Youniss, J., & Smollar, J. (1985). *Adolescents' relations with mothers, fathers, and friends.* Chicago: University of Chicago Press.

Zuckerman, M., Gioioso, C., & Tellini, S. (1988). Control orientation, self-monitoring, and preference for image versus quality approach to advertising. *Journal of Research in Personality, 22,* 89-100.