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Personal Goals in Social Roles: Divergences and Convergences Across Roles and Levels of Analysis

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ABSTRACT   Most contemporary personal goal research aggregates across goals, perhaps masking important differences between goals. We assessed this risk by examining both similarities and differences between the goals that participants pursued in five important social roles. Previous relevant findings (Cantor, Norem, Niedenthal, Langston, & Brower, 1987) and self-determination theory (Deci & Ryan, 1985) were used to predict between-role differences in goal appraisal dimensions. Although theoretically meaningful differences were found across child, employee, romantic, friendship, and student goals, and also across within- and between-subject levels of analysis, all goals were essentially the same in one important way: Making longitudinal progress in them predicted positive change in accompanying role-circumstances and role-satisfaction (except cepting friendship goals). This indicates that researchers do not necessarily lose information by aggregating, and affirms that goal attainment is generally desirable.

Personal goal methods and constructs offer powerful tools for researching the motivational dynamics of personality (Cantor & Fleeson, 1994; Emmons, 1996), and in the past decade an explosion of personal goal-based research has appeared (see Austin & Vancouver, 1996, for a review). As a partial listing of the advantages of this approach, idiographic goal constructs are *personologically valid*, given that participants provide the basic goal "stems," almost any issue can be explored; and they lend themselves well to *longitudinal* studies, given that they naturally occupy participants' attention over time. In this article we examine several methodological issues relevant to personal goal research, and we also test several substantive hypotheses concerning differences between different types or contents of goals.

The Aggregation Procedure

The majority of published personal goal research has used an aggregation procedure, in order to derive summary information about a person and/or that person's goal-system. To illustrate this procedure, if a person lists 10 goals, the researcher may ask the same question about each goal (e.g., "How confident are you that you can obtain the goal?"). Summing across the participant's ratings then yields a global 10-item measure of a psychological construct (e.g., goal self-efficacy). Such aggregates may then be correlated with many other personality variables, such as depression, personality traits, or coping strategies. Using this technique, goal researchers have learned a great deal about the dynamic facets of personality (Elliot & Sheldon, 1997; Emmons, 1986; Emmons & King, 1988; Palys & Little, 1983; Ruehlman & Wolchik, 1988; Sheldon & Elliot, 1998; Sheldon & Kasser, 1998).

In essence, the aggregation procedure treats each goal as a parallel indicator of a single latent trait (Sheldon & Elliot, 1998), and, in fact, adequate reliability coefficients are usually obtained with these composites (see Elliot & Sheldon, 1997; Emmons, 1986; Sheldon & Elliot, 1998). Some have argued, however, that important information is lost when researchers aggregate indiscriminately across goals (Cantor & Fleeson, 1994), because potential differences between goals are ignored. This would suggest that published findings employing aggregated variables might hold only for some contents or categories of goals, or worse, that reported findings are even contradicted by some minority of goals.

For example, the finding that goal-attainment predicts enhanced well-being or life-satisfaction is now well established (Brunstein, 1993; Elliot & Sheldon, 1997; Elliot, Sheldon, & Church, 1997; Sheldon & Kasser, 1998). But is this true of all goals? Perhaps some goals, when attained, actually contribute to decreased well-being. This might occur when the process of attaining a goal is so stressful that any positive attainment effects are mitigated (Scheier, Weintraub, & Carver, 1986), when the goal is of a type that is not consistent with basic human needs or nature (Ryan, 1995), or when the goal is not appropriate to the person's important social roles or developmental life-stage (Erikson, 1963). In short, it is important for researchers to understand the ways in which different types of goals can differ from each other, and also differ in their effects upon the person. Of course, the content-analytical typology upon which one bases one's study can draw from many different conceptual systems, such as consensual life-tasks, social roles, or implicit motives.

The Life-Task Approach

A few goal researchers have wrestled in depth with these "issues of content" (Cantor & Fleeson, 1994; Emmons, 1991; Omodei & Wearing, 1990). Cantor and her associates have provided the best articulated content-analytical system for examining different types of goals within-subject, a system based on consensual life-tasks. In order to study the ways in which people pursue different postulated life-tasks, Cantor employs a technique in which participants are first asked to list an open-ended set of idiographic personal goals, and are then asked to classify these goals into six or seven consensual life-task categories (such as "getting good grades," "managing my time," "developing an identity," and "making friends"). These categories were derived inductively, through extensive analysis of the spontaneous goals listed by university student populations. Typically, new participants are able to classify 70% of their goals into one of these normative task-categories. After this, however, the methodology takes leave of participants' stated goals, instead asking participants to appraise each experimenter-supplied task directly (e.g., the participant rates the task of "getting good grades," regardless of whether any of his/her self-generated goals addressed this task). These secondary task-appraisals then become the primary focus of the researchers' statistical analyses. Using this technique, Cantor and her

colleagues have told us a great deal about the strategic processes by which individuals tackle important life-tasks.

By asking participants to put aside their stated goals and appraise each life-task directly, researchers ensure that each participant has balanced data in each category of interest. Thus, particular tasks can be easily selected out and studied in detail, and participants can easily be sub-divided into types based on configurations of life-task appraisals. Cantor and Fleeson (1994) have argued that little is lost by leaving participants' original goal statements behind, and that much is gained by ensuring that the same goal-contents are represented within every subject.

We applaud Cantor et al.'s focus on particular goals, and the rich use they have made of within-subject information regarding different types of goals. We believe, however, there may be a significant cost of their particular methodology—namely, that it makes the meaning of partici-pants' goal appraisals ambiguous. For example, once participants' atten-tion is turned to the set of normative life-tasks, are they really appraising their *own* goals? Or, perhaps, are they merely acceding to study require-ments? If a participant has no goal or sense of motivation corresponding to an experimenter-supplied life-task, does this mean that he or she makes ratings on the basis of stereotypes or potentially inaccurate beliefs? This issue may be especially problematic given how readily some participants confuse experimenter-supplied goals with their own (Kuhl & Kazen, 1994). Finally, might important personality information be excluded by this methodology, given that 30% of the average participant's self-generated goals are not represented at all in the final study data?

The Current Research

Linking idiographic goals to nomothetic content categories. In light of these issues, we designed the current research with several purposes in mind. As one purpose, we present two new methodologies for linking goals to content categories. Both methodologies permit systematic com-parison of different contents of goals (i.e., each participant has data in each content category), yet both methodologies fully preserve the idio-graphic element of goal-assessment (i.e., participants' self-generated goal-statements remain the focus for appraisals).

In Study 1, we asked participants to rate the relevance of each of 10 personal goals to each of five important life-domains. We then used within-subject correlational analysis to examine how the rated relevance

of goals to a particular content domain was associated with other impor-tant goal-appraisal dimensions. Predicted differences in correlational patterns between domain-relevance variables and goal-appraisal dimen-sions were the focus of the analysis (see below for substantive details).

As a second method of linking goals to content domains, in Study 2 we employed a quasi-experimental procedure by asking participants to specifically generate goals to represent their effortful behavior within each of the five life-domains. Predicted mean differences were the focus of this analysis; specifically, we conducted within-subject multivariate analyses of variance (MANOVAs) on participants' goal appraisals to examine how they differed across content domains. We expected to find similar substantive results using both methods of linking goals to content categories. Notably, either linking methodology could be used in con-junction with any content-analytical system.

Introducing a social roles approach. As a second major purpose of these studies, we used a somewhat different content-analytical system than the one Cantor and colleagues have employed, in order to investigate differences between goals of different types. Specifically, we distin-guished between goals in terms of important social roles rather than in terms of consensual life-tasks. The particular roles we studied included "child" (son/daughter), "employee," "romantic partner," "friend," and "student." These five roles have near-universal relevance to college students (Hoelter, 1985) and have been employed successfully in other recent research (Donahue, Robins, Roberts, & John, 1993; Sheldon, Ryan, Rawsthorne, & Ilardi, 1997). Although other behavioral domains doubtless become important in later life (e.g., parent, supervisor, grand-parent), we believe these five roles encompass the most important arenas in which nearly every college student strives. In contrast, other roles that students might take on, such as those of "athlete," "parish-member," or "club-president," are likely to be relevant only for some subset of students.

How do life-tasks and social roles differ, as content-analytical sys-tems? Social roles are typically viewed as normative prescriptions for behavior that help define what an individual should do within a particular context (Sarbin & Allen, 1968). The social role concept is grounded in sociological theory, focusing on cultural forces that transcend the indi-vidual and tend to mold his/her behavior (Biddle, 1979). In comparison, life-tasks are viewed as issues or transitions that individuals must

negotiate during particular parts of their lives (Cantor & Zirkel, 1990). The life-task concept is grounded in developmental personality theory (Erikson, 1963), focusing on the "hurdles" a person must clear in order to continue maturing. In short, social role theory has tended to focus on contextual determinants of behavior, and life-task theory has tended to focus on personological determinants of behavior.[1]

The current role-assessment approach also differs from the life-task approach methodologically, in that it makes fewer normative assumptions regarding participants' specific goals. For example, in the academic domain, the consensual life-task system implicitly assumes that all students are "trying to get good grades," given that this is the statement which is actually appraised by participants. In contrast, our role-based system merely defines a domain of functioning for participants, allowing them to assess the relevance of their goals to that domain (Study 1) or to specify their particular goals within that domain (Study 2). Thus the system can accommodate other academic-related goals that students may have besides getting good grades, such as "taking more courses outside my major," or "getting to know my professors better." Similarly in the interpersonal sphere, the role-based system can accommodate counter-normative interpersonal goals such as "scale back my social life" or "get to know my existing friends better." in addition to the life-task of "make new friends." Thus, the proposed role-based assessment methodology may enable the diversity and uniqueness of participants' goals to be better represented.

Despite these differences, it is important to note the strong similarities between the life-task approach and the current role-based approach. Both approaches assume that humans go through a process of adapting to social constraints, constraints that exert influence within more-or-less discrete life-realms. Also, some of the *specific* content domains focused on by the two methods are very similar (e.g., student role vs. academic life-tasks; friendship role vs. interpersonal life-tasks). In order to demonstrate the underlying convergence between the two content-analytical systems, below we will derive some of our substantive predictions regarding differences between student and friendship roles by drawing

1. Notably, Erikson's conception might best be described as *combining* personological and social-contextual models, in that development is viewed as a function of the person's ability to negotiate age-graded social contexts and societal expectations.

from Cantor et al.'s past findings regarding academic and interpersonal life-tasks. Again, to find differences between the goals undertaken in different social role domains would suggest that aggregating across goals may conceal information.

Assessing the replicability of findings within-subjects and between-subjects. A third major purpose of the current research was to assess the potential costs of aggregation in another way, by examining differences in findings within- and between-subjects. Many have noted that patterns of relationship found among constructs within-subject need not replicate at a between-subject level of analysis, because different processes can be at work within and between people (Epstein, 1983; Marco & Suls, 1993). For example Wood, Saltzberg, Neale, Stone, and Rachmiel (1990) found that feeling more self-conscious on a particular day was *not* associated with higher-than-average levels of negative mood on that day (relative to the participant's own mean), but feeling more self-conscious on-average *was* associated with higher-than-average levels of negative mood (relative to other participants). Similarly, in this research we reasoned that feeling a certain way about a particular goal may have different implications for that goal relative to the person's other goals, compared to the implications of being a *person* who feels that same way about *all* of his/her goals, relative to other people's overall level of that feeling. To find different patterns of results within- and between-subjects would also indicate that information is lost through the popular aggregation technique, or at least, would suggest that a different story might be told about the data at the two levels of analysis (Lazarus, 1994).[2]

Selected appraisal dimensions. As a vehicle for analyzing similarities and differences between goals in different roles, and between patterns of effects within- and between-subjects, we focused on a variety of

2. Although some refer to within- and between-subject statistical analysis as "idiographic" and "nomothetic," respectively, we feel this can be misleading. Within-subject analyses are just as "nomothetic" as between-subject analyses, in that in both cases, researchers typically create a single statistic to represent each participant. In the case of between-subject analyses, this statistic is a mean, whereas in within-subject analyses, it is a correlation. We prefer to reserve the term "idiographic" for assessment methodology that make use of participant-generated data, such as the personal goals methodology used in the current studies. Such methodologies enhance the meaningfulness of assessment for participants, and thus, the meaningfulness of their data for researchers.

commonly researched goal-appraisal dimensions. In Study 1 we focused on participants' *perceived locus of causality* (PLOC; deCharms, 1968) for goals; that is, the extent to which goals are felt to be caused by *external* forces or necessities, by *introjected* oughts or shoulds, by *identified* personal values, or by *intrinsic* interest in the process of striving (Ryan & Connell, 1989; Sheldon & Kasser, 1995, 1998; Sheldon & Elliot, 1998). These four perceived causes for one's own behavior are understood to represent a continuum of internalization (ranging from no internalization to some internalization to full internalization), and they typically form a simplex correlational structure (Ryan & Connell, 1989), in that adjacent dimensions correlate positively and the opposing extremes (i.e., external and intrinsic) correlate negatively. By assessing PLOC one can evaluate the degree to which participants have internalized their goals of different psychosocial types. The PLOC methodology also gives a way of assessing the extent to which role-behaviors are positively motivated, given that internalized motivation has been found to predict psychological well-being (Deci & Ryan, 1985; Sheldon & Kasser, 1995).

In Study 2 we again assessed participants' PLOC for each kind of goal and also asked participants to rate the difficulty of, their expectancies regarding, and their level of commitment to, each of their goals. Furthermore, we added a longitudinal element to Study 2, by assessing participants' progress in their goals during the semester as it relates to positive changes in participants' role-circumstances over time.

Study 1

Substantive Hypotheses

We tested nine major substantive hypotheses in these two studies. First, in Study 1 we hoped to conceptually replicate four of Cantor et al.'s (1987) findings regarding academic and interpersonal life-tasks, which map fairly directly onto our student and friend roles. Cantor et al. discovered that academic tasks and interpersonal tasks were both appraised as *important*, but that academic tasks were much less *enjoyable* than interpersonal tasks. Langston and Cantor (1989) and Zirkel and Cantor (1990) reported similar findings. In self-determination theory, *identified* motivation (in which one pursues a goal because it accords with important personal values) corresponds well with "importance," whereas

intrinsic motivation (in which one pursues a goal because the process of pursuing it is inherently rewarding) corresponds well with "enjoyment." Thus, generalizing from past results, we expected that (a) friendship-related goals would be relatively higher in identified motivation, and that (b) friendship goals also would be higher in intrinsic motivation. Thus, for personal values, the typical convergent pattern of results was expected regarding identified and intrinsic motivation, in which what is important is also enjoyable. In further accordance with Cantor and colleagues' past results, we hypothesized that (c) the student-relevance of goals would be positively associated with identified motivation, but (d) the student-relevance of goals would be *negatively* associated with intrinsic motivation. The divergence of identified and intrinsic motivation for student goals would help illuminate the special and intrinsic nature of the student role, given that the adjacent identified and intrinsic PLOC dimensions are typically positively correlated (Ryan & Connell, 1989; Sheldon & Elliot, 1998).

We also applied propositions from self-determination theory (Deci & Ryan, 1985, 1991) to make further substantive predictions for Study 1. According to this theory, people often feel more externally motivated or "controlled" by activities that promote a strong reward orientation. Goals in the student and employee domains are typically undertaken with salient rewards in mind (grades and money, respectively), so we expected that (e) student related goals and (f) employee-related goals would both be higher in external motivation. In contrast, we expected that participants would report *less* external motivation for their (g) friendship- and (h) romantic partner-related goals. This is because such goals are unlikely to involve salient external rewards or tangible incentives, given their focus on interpersonal relations and their association with leisure activities. As a final prediction, we hypothesized that (i) child-related goals would be stronger in introjected motivation. Given typical parent-child dynamics at this developmental stage (Erikson, 1963), it seemed likely that many college-age participants would report pursuing child-related goals out of a sense of guilt or obligation (e.g., "try to call home once a week").

In sum, Study 1 was devoted to establishing that there are interpretable and potentially important differences between goals within-subjects, depending on which social role the goals represent. Such a finding would indicate that the aggregation technique employed by many personal goal researchers may indeed mask important information. Particular substantive predictions regarding these differences were derived from

Cantor et al.'s (1987) life-task findings and from self-determination theory (Deci & Ryan, 1985). We also tested our substantive hypotheses in aggregated or between-subject analyses, to examine the replicability of within-subject correlational patterns at a different, statistically orthogonal level of analysis.

METHOD

Participants and Procedures

Participants were 122 undergraduates at the University of Rochester, 48 men and 74 women, who took part for extra credit in a psychology course. All measures were administered in a single questionnaire packet, which participants took home and returned the next week.

Measures

Personal strivings. In Study 1 we employed the "personal strivings" construct (Emmons, 1986, 1991) to assess participants' personal goals, using Emmons' standard instructions. Strivings were defined as "objectives that that you typically or characteristically are trying to do in your everyday behavior." Participants were asked to generate at least 10 strivings. On the following page those who had generated more than 10 strivings were asked to select their 10 most important strivings for further consideration.

Perceived locus of causality. Next, participants were asked to rate the extent to which they pursue each striving for each of four reasons, using a 1 (*not at all because of this reason*) to 7 (*completely because of this reason*) scale. As in past research, *External* reasons involved striving "because somebody else wants you to or because the situation seems to demand it," *Introjected* reasons involved striving "because you would feel ashamed, guilty, or anxious if you didn't," *Identified* reasons involved striving "because you really believe that it's an important goal to have," and *Intrinsic* reasons involved striving "because of the fun and enjoyment which the striving provides you" (Sheldon & Kasser, 1995, 1998; Sheldon & Elliot, 1998, 1999). Each striving received a score on each of these four dimensions.

Relevance of strivings to social roles. First, participants read a description of each of the five roles of child, employee, romantic partner, friend, and student. These descriptions were based on those provided by Donahue et al. (1993) and by Sheldon et al. (1997). Participants were then asked to rate the relevance of each of their 10 strivings to each of the five roles, that is, the extent to which

doing well in each striving would "help improve yourself, and/or your circumstances," in each role. These ratings were made using a 1 (*no help at all*) to 9 (*very much help*) scale. Each striving received a score on each of these five dimensions.[3]

RESULTS

Participants did not differ by gender in the degree to which their strivings were relevant to particular roles, nor in the degree to which strivings were pursued for external, introjected, identified, or intrinsic reasons. Therefore we omit consideration of gender in the analyses reported below. As a second preliminary analysis, we examined the average within-subject associations of external, introjected, identified, and intrinsic motivation (based on the 10 goals rated by each participant) and found the typical simplex pattern of correlations among the four perceived locus of causality dimensions (Ryan & Connell, 1989).

Table 1 presents averaged within-subject correlations between the five role-relevance variables and the four PLOC variables. For significance testing, these correlations were first transformed into Fisher Z-statistics, and one-sample *t* tests with 121 degrees of freedom were conducted to assess whether the averaged Zs differed from 0 (Michela, 1990; Wood et al., 1990). Conceptually replicating the life-task-based findings of Cantor et al. (1987) and Zirkel and Cantor (1990), and supporting our first and second hypotheses, the relevance of goals to the friendship-role was positively associated with both identified and intrinsic motivation. In further conceptual accordance with Cantor's past results, and supporting our third hypothesis, participants were more strongly identified with strivings to the extent that they were relevant to the student-role. The negative correlation of intrinsic motivation with the student-relevance of goals was not significant, however, failing to support our fourth hypothesis.

3. Notably, all of the constructs in both Study 1 and Study 2 were assessed with single-item measures. This was done in order to minimize subject fatigue, given that multiple constructs were being assessed for each of 10 different goals. Although single-item measures can raise concerns regarding reliability and validity, such concerns may be alleviated to the extent that the constructs significantly correlate with each other, in ways predicted by theory (Garnefe, Cummings, Dunham, & Pierce, 1998; Pavot & Diener, 1993).

Table 1
Study 1: Averaged Within-Subject Correlations Between Role-Relevance Ratings
and Perceived Locus of Causality Ratings

	Perceived Locus of Causality Variables			
	External Motivation	Introjected Motivation	Identified Motivation	Intrinsic Motivation
Role-Relevance Variables				
Child-role relevance	.02	.05	.29*	− .01
Employee-role relevance	.08	.06	.16+	− .04
Romantic-role relevance	− .15+	− .13	.22*	.17*
Friend-role relevance	− .16+	− .17*	.17*	.17*
Student-role relevance	.11	.08	.20*	− .05

**p < .01. *p < .05. +p < .10.

Next, we examined our substantive predictions based on self-determination theory (Deci & Ryan, 1985, 1991). Contrary to our fifth and sixth hypotheses, the student- and employee-relevance of goals was not significantly positively associated with external motivation. Consistent with our seventh and eighth hypotheses, however, the relevance of goals to friendship and romantic roles was marginally significantly negatively correlated with external motivation. Finally, failing to confirm our ninth hypothesis, the positive correlation of the child-relevance of goals with introjected motivation did not reach significance.

Next, we conducted further analyses to directly compare the magnitudes of the within-subject associations between external motivation and employee- and student-relevant goals, as compared to the associations between external motivation and friend- and romance-relevant goals. To do this, we employed the formula given in Cohen and Cohen (1983) for testing whether correlations significantly differ from each other. In all four analyses the differences in correlations with external motivation were significant (for romance vs. student, *t*(121) = 2.31; for romance vs. employee, *t* = 2.16; for friendship vs. employee, *t* = 2.03; and for friendship vs. student, *t* = 2.12; all *ps* < .05). These results demonstrate concretely that goals associated with roles of different types can diverge from each other—here, in the level of external motivation associated with particular roles. Additional analyses comparing the magnitudes of the within-subject associations between *intrinsic* motivation and employee- and student-related goals, as compared to the associations between intrinsic motivation and friend- and romance-related goals, yielded similar results (*ts* ranged from 1.75 to 1.94). Furthermore, the same pattern emerged for *introjected* motivation; its correlations with romance- and friend-related goals tended to be different from its correlations with employee- and student-related goals (*ts* ranged from 1.66 to 2.03). Finally, there were essentially no divergences among the role-relevance variables in their relationship with *identified* motivation. As can be seen in Table 1, participants identified more strongly with particular strivings to the extent that they were relevant to any one of the five social roles studied.

Recall that another general purpose of this research was to examine the replicability of within-subject patterns of results at a between-subject level of analysis, an issue that also bears on the potential perils of drawing broad conclusions from aggregated data. To do this, we next examined associations between summed employee-, child-, friend-, student-,

and romantic-relevance variables, and summed PLOC variables. The substantive question of interest in the these analyses is, "Are people whose goals are in general more child-relevant, or more employee-relevant, romance-relevant, friend-relevant or student-relevant, likely to be in general higher in external, introjected, identified, or intrinsic motivation?"

When we correlated these two sets of variables, a substantially different pattern emerged from that presented in Table 1. As can be seen in Table 2, all five of the aggregate role-orientation variables correlated significantly with aggregate identified motivation for striving, and also with aggregated intrinsic motivation. None of the role-orientation variables were associated with aggregate external or introjected motivation. Thus, these person-level results seem to paint a simpler and somewhat "rosier" picture of the relationship of role-orientations to perceived loci of causality. Specifically, they suggest that all of the five roles we studied promote positive forms of motivation, without promoting the less desirable forms of motivation.

BRIEF DISCUSSION

Study 1 demonstrated that goals relevant to different role-based content categories can be appraised quite differently, indicating that the practice of aggregating ratings across goals may indeed conceal information (Cantor & Fleeson, 1994). Although it is often tacitly assumed by goal researchers that all goals equally represent a single underlying construct (such as "goal commitment" or "goal self-efficacy"), our data suggest that different types of role-goals can vary systematically with respect to the construct being assessed—some roles are associated with "more" of the construct, and some "less." Specifically, friendship- and romance-related goals tended to be relatively more intrinsically motivated, and less externally and introjectedly motivated, whereas student- and employee-related goals tended to be more externally and introjectedly motivated, and less intrinsically motivated.

Despite finding these divergences between different types of goal, within-subject analyses also uncovered a way in which goals of different types *converge*—that is, the stronger the relevance of a goal to *any* of the five roles, the stronger was the identified motivation for that goal. We believe this pattern was evidenced because all five of the social roles we studied are central life-domains for college students, arenas in which they strive to enact important developmental tasks. That is, goals that are

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Table 2

Study 1: Between-Subject Correlations Between Aggregated Role-Relevance Ratings
and Aggregated Perceived Locus of Causality Ratings

	Perceived Locus of Causality Variables			
	External Motivation	Introjected Motivation	Identified Motivation	Intrinsic Motivation
Role-Relevance Variables				
Child-role relevance	− .09	.07	.29**	.28**
Employee-role relevance	− .05	.12	.24**	.31**
Romantic-role relevance	− .15	.01	.41**	.39**
Friend-role relevance	− .17	.01	.40**	.38**
Student-role relevance	− .11	.01	.39**	.31**

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

relevant to these important life-domains may be more internalized, compared to goals that do not connect with any of these important social roles and developmental arenas.

At the aggregated or between-subject level of analysis, we replicated the role-level finding that the relevance of goals to all five roles predicted identified motivation. After this, however, the within- and between-subject findings diverged. Contrasting with the more nuanced results found within-subjects, the aggregated role-relevance variables were uniformly associated with identified and intrinsic motivation, and were uniformly *unrelated* to introjected and external motivation. Thus, according with the suggestions of Epstein (1983) and others, it appears that correlational patterns observed at the within-subject level of analysis need not replicate at a between-subject level of analysis. This suggests that personal goal researchers should habitually assess the degree to which within-subject and between-subject results diverge and should try to understand whatever differences they find.

To take our own advice, why were student- and employee-related goals associated with negative motivation within-subjects, but with positive motivation between-subjects? First, it must be recognized that the target of comparison is different at the two levels of analysis: within-subjects, student- and employee-relevant goals are being compared to participants' other goals, and between-subjects, student- and employee-oriented participants are being compared to other participants who are not so oriented toward these achievement-related domains. Within-subjects, the current evidence suggests that student- and employee-relevant goals are undergirded by more "forced" forms of motivation (Deci & Ryan, 1985) than are interpersonal role-goals, perhaps because these achievement-related goals are relatively more stressful or less pleasant. But such within-subject variation is probably natural and expectable, providing evidence of the different constraints and demands faced by all contemporary college students. Between-subjects, the current evidence suggests that participants whose goals are on average more strongly relevant to employee- and student-roles are more positively motivated in *all* of their goals. Given that academic and career-related achievement are particularly important tasks for students of this age, participants who are strongly engaged in these tasks may evidence greater self-direction and more successful internalization of developmentally appropriate norms.

Although only five of our nine substantive hypotheses received support in Study 1, all of the hypothesized correlations went in the predicted

direction (see Table 1). In fact, given more liberal significance testing based on a pooled *N* of 1,220 goals (Comento, Michela, & Goldberg, 1988; Sheldon & Elliot, 1998), all nine correlations would have been significant or marginally significant. This suggests that the "fault" in Study 1's failure to validate some of the substantive hypotheses may lie more in the methodology employed, than in the hypotheses tested. Thus, scrutiny of an alternative assessment approach seemed to be an appropriate next step.

Study 2

One potential limitation of the assessment methodology employed in Study 1 is that strivings were not *clearly* of one type or another. Instead, their degree of relevance to each social role was assessed on a continuous scale. Because strivings could be relevant to more than one role simultaneously, the unique association of each role with the different appraisal dimensions is unclear. Thus we believed that it would be desirable to employ a quasi-experimental procedure, in which each listed goal clearly represents one and only one social role. Accordingly, in Study 2 we asked participants to specifically generate goals in each of the five social roles. We expected to find a similar pattern of substantive results as in Study 1, but hoped that the new, more specific goal to-content linking methodology would yield stronger empirical effects.

We again assessed the *perceived locus of causality* for goals in Study 2, seeking to replicate and extend Study 1 findings regarding these four types of motivation. We also, however, assessed several other important goal-appraisal dimensions. Specifically, we asked participants to rate their *commitment* to each goal, the *difficulty* of each goal, and their *expectancy* that they would do well in each goal. These constructs are important because each plays a prominent role in contemporary theories of motivation or goal-striving (Bandura, 1989; Locke & Latham, 1990; Lydon & Zanna, 1990).

We added two new substantive hypotheses in addition to the nine tested in Study 1: we expected that (j) student goals would be rated as more difficult, but that (k) participants would be strongly committed to student goals. Hypothesis (j), if supported, might help explain why student goals are somewhat less enjoyable. Viewed in terms of "flow" or optimal challenge concepts of intrinsic motivation, such goals may be perceived as too difficult and thus may be associated with anxiety and stress

(Csikszentmihalyi & Csikszentmihalyi, 1988). Hypothesis (k), if supported, would suggest that students take their student goals very seriously despite their difficulty, consistent with the Study 1 finding that most students identify strongly with such goals, and with the fact that academic achievement is quite important for participants' later life-trajectories. We did not make specific predictions regarding expectancy.[4]

Another limitation of Study 1 involves the fact that all appraisals were made at a single point in time. Recent research indicates that personal goal constructs may be particularly valuable as a research tool when they are tracked over time (Gollwitzer, 1990; Sheldon & Elliot, 1999), because such studies can supply important information concerning the means by which people effect positive change in their lives. For example, as noted in the introduction, many studies now indicate that doing well in a set of goals over time predicts enhanced well-being at the end of that time (Brunstein, 1993; Elliot & Sheldon, 1997; Sheldon & Kasser, 1998). We do not yet know, however, to what extent this type of finding is qualified by the type of goal in which a person makes progress. Again, some types of goals may not have a beneficial effect even when they are attained, if those goals are too stressful or are too inappropriate for a person's current needs, life-situation and/or social roles.

Thus, in Study 2 we assessed participants' degree of progress in each goal midway through the semester, in addition to assessing participants' goal-motivations at the beginning of the semester. This midsemester assessment procedure made it possible to examine the effects of goal-progress (or the lack of it) on end-of-semester role-circumstances and role-satisfaction. To minimize the influence of spurious state variance on the results, and to minimize the chance that participants would confuse the goal and role variables, we always measured role constructs and goal constructs at distinct points of time.

We expected that longitudinal goal-attainment would predict increased role-satisfaction and rated positive change in role-circumstances in all five roles. We believe, and the Study 1 results support, that all five of these role-domains are important and appropriate avenues for striving.

4. Recall that we also conducted between-subjects analyses, in Study 1 (see Table 2) by examining variations in the *average* extent participants' 10 goals were relevant to particular roles, as predictors of averaged levels of motivation. Such effects could not be examined in Study 2, because there was no between-subjects variation in goal-to-role-relevance (since each participant was asked to generate one goal in each role).

This leads to the hypothesis that longitudinal progress in any of these role-goals should have a beneficial effect on the person's satisfaction and overall situation within that role. Additionally, we predicted that this effect would be evidenced at both within-subject and between-subject levels of analysis. That is, in addition to expecting role-specific progress to predict increased satisfaction within that particular role, we also expected that the aggregate degree of progress made across the five role-goals would predict aggregated change in role-satisfaction and role-circumstances, as well. Finding this pattern at both levels of analysis would demonstrate another type of convergence between different role-goals, and would further support goal theorists' assumption that attaining one's goals is in general beneficial.

METHOD

Participants and Procedures

Participants were 82 undergraduates at the University of Rochester, 29 men and 53 women, who took part for extra credit in a psychology course. The data were collected in four parts. The initial role-satisfaction assessments were administered in class, near the beginning of the semester. The initial goal-assessments were given in a questionnaire packet that participants took home with them following the in-class assessment. In this packet, participants generated five role-goals and made PLOC, commitment, expectancy, and difficulty ratings. A midsemester goal-questionnaire was given in class, approximately 5 weeks after the initial packet was administered. In this questionnaire participants appraised the amount of progress they had made in each of the five goals since the beginning of the semester. The final role-assessments were administered in a take-home questionnaire packet, given near the end of the semester. In this packet participants again rated their level of role-satisfaction, and also rated the degree of positive change they had experienced in each role over the course of the semester.

Measures

Role-assessments. While completing the initial in-class questionnaire, participants read the same five definitions of the social roles that were used in Study 1. They then rated how satisfied they were with their current situation in each of the five roles, using a 1 (*not at all*) to 9 (*extremely*) scale. These five judgments constituted our *Time 1 Role-Satisfaction* measures.

Ten weeks later, in the final take-home questionnaire, participants again rated their current level of satisfaction within each role, using the same scale. These five judgments constituted our *Time 2 Role-Satisfaction* measures. In this final questionnaire participants also rated "how much negative or positive change" they saw in their circumstances within each of the five roles over the course of the semester, using a 1 (*much negative change*) to 5 (*no change*) to 9 (*much positive change*) scale. These five judgments constituted our *Change in Role-Circumstances* measures. With the latter set of variables, we attempt to represent the degree of recent improvement in participants' lives within each role with a single value, rather than representing improvement statistically by regressing Time 1 out of Time 2.

Personal projects. For Study 2, we assessed personal goals using the "personal project" construct (Little, 1983). Personal projects are relatively short-term and specific goals, and thus are ideally suited to semester-long longitudinal studies (Sheldon & Kasser, 1998). Projects were defined for participants as "objectives or outcomes that you will be trying to achieve during the course of the semester." We asked participants to generate one semester-long project in each of the five roles of student, friend, romantic partner, employee, and child, preferably by identifying initiatives that they already intended to pursue. Several examples were given of each type of goal. Participants were asked to brainstorm several possible goals for each role, then to "put the booklet down at least overnight," before deciding on a final set.

Scrutiny of the content of the final listed goals revealed the following patterns. Friend goals typically involved making new friendships, maintaining or strengthening old friendships, being a good friend, or having fun with friends. Interestingly, however, many friendship goals involved counternormative themes, such as not depending on, not being distracted by, or not wasting time on friends. Romance goals typically involved creating new relationships, or maintaining or strengthening old relationships. Many such goals, however, involved avoiding, breaking off, or getting over romantic relationships. In addition, a number of romantic goals involved losing weight or improving body image. Most employee goals involved obtaining summer or work-study jobs, taking current jobs more seriously, or obtaining increased pay in current jobs. A number, however, involved *future* employment-related goals, such as deciding on career options, or researching internship possibilities. Most student goals involved obtaining good grades or academic honors, but a number involved getting to know professors better or obtaining alternative educational experiences. Finally, child goals tended to involve maintaining or improving relations with parents, helping parents, and making parents proud/earning their respect. A number of child goals, however, concerned better tolerating, accepting, forgiving, or ignoring parents.

After selecting a final set of goals, participants rated each on each of the four PLOC dimensions assessed in Study 1, yielding an *External, Introjected, Identified,* and *Intrinsic* motivation score for each type of goal. Participants then rated their level of *Commitment* to each goal ("How committed do you feel to each goal?"), their *Expectancy* in each goal ("How well do you expect to do in each goal?"), and the degree of *Difficulty* of each goal ("How difficult do you think each goal will be?"). All ratings were made using a 1 (*not at all*) to 9 (*very much*) scale.

Approximately 5 weeks later, participants completed an in-class questionnaire in which they were asked, "How much progress have you made in each goal during the month since you first listed them?" Each goal was rated using a 1 (*very little progress*) to 7 (*very much progress*) scale. These five judgments constituted our *Mid-Semester Progress* variables.

Supplementary variable computation. We also computed aggregated Time 1 Role-Satisfaction, Time 2 Role-Satisfaction, Change in Role-Circumstances, Mid-Semester Progress, and Expectancy variables. We intended to use these aggregated measures to control for person-level variance in multiple regression analyses predicting change in satisfaction and circumstances within each role (Kasser & Ryan, 1993, 1996; Sheldon et al., 1997).

RESULTS

Gender was independent of all major study variables. For example, men did not differ from women in the extent to which they felt intrinsic motivation for their romantic goals. Therefore, we collapsed across gender in the analyses reported below.

Mean Differences in Goal Appraisal Dimensions

Testing Study 1's nine hypotheses. First, we conducted a series of within-subject MANOVAs to examine mean differences across the five roles on the four PLOC variables. Again, we expected that the pattern of mean differences on these motivational variables would conform to the pattern of correlational differences predicted in Study 1. Table 3 presents the data, including the results of a series of paired-sample *t* tests to compare each pair of means within each appraisal dimension. Because of the number of tests conducted, we used a conservative .01 significance criteria to generate the subscripts in Table 3. Supporting our first of four hypotheses derived from the past work of Cantor and her associates (1987, 1988, 1990), friendship goals were perceived as more intrinsically

Table 3
Study 2: Mean Differences on Goal-Appraisal Variables by Type of Goal

	Perceived Locus of Causality Variables				Other Appraisal Variables		
	External Motivation	Introjected Motivation	Identified Motivation	Intrinsic Motivation	Commit-ment	Expect-ancy	Difficulty
Role							
Child goal	3.05_{bc}	4.77_c	7.49_{cd}	5.60_{ab}	7.34_a	6.94_{ab}	4.71_a
Employee goal	3.72_{cd}	4.00_b	6.61_a	5.26_{ab}	7.02_a	7.04_{ab}	5.42_a
Romantic goal	2.82_{ab}	3.37_{ab}	6.95_{abc}	6.07_{bc}	7.04_a	6.00	6.27_b
Friend goal	2.28_a	3.56_{ab}	6.88_{ab}	6.34_c	6.93_a	6.68_a	4.94_a
Student goal	4.04_d	5.13_c	7.42_{bd}	5.23_a	7.93	7.35_b	6.98_b
$F(4, 78)$	$11.34**$	$14.28**$	$4.91**$	$5.37**$	$5.71**$	$9.65**$	$17.88**$

Note. Within columns. means not sharing a subscript are significantly different from each other at the .01 level.
$**p < .01$.

motivating. Diverging from Study 1 findings and our second hypothesis, however, friendship goals were not rated particularly highly in identified motivation. Consistent with our third and fourth hypotheses, however, participants were strongly identified with their student-related goals, but at the same time reported the least amount of intrinsic motivation for such goals. Again, this finding suggests that student goals are held with considerable ambivalence.

Supporting hypotheses five to eight, based on self-determination theory (Deci & Ryan, 1985), student and employee goals were more externally motivated and friendship and romance goals were least externally motivated. Also, consistent with our ninth Study 1 hypothesis, child goals were more strongly introjected. In short, eight of our nine Study 1 hypotheses received support in Study 2.

Table 3 also demonstrates, consistent with Study 1 findings, that participants were relatively strongly identified with all of their role-related goals. This result again supports our assumption that the five social roles that we selected for study are all central behavioral domains for college students. Also, the fact that the means for identified and intrinsic motivation are all higher than the means for external and introjected motivation suggests that personal goals within these five important social roles are in general positively motivated.

Examining cross-role differences in commitment, difficulty, and expectancy. Next, we examined our two new predictions for Study 2. As predicted by our tenth hypothesis, goals in the student role were rated as most difficult. Also, as predicted by the eleventh hypothesis, participants were most committed to student goals. Again, these findings help reveal the special and potentially conflicted nature of student goals. Regarding other commitment findings, Table 3 reveals that participants were not especially committed to their friendship goals—in fact, only student goals stood out from the rest in terms of commitment. Thus, Cantor et al.'s (1987) finding that interpersonal tasks are perceived as quite important was not replicated in these data. Regarding other difficulty findings, friendship, employee, and child goals were rated as less difficult, whereas romantic goals, along with student goals, were rated as more difficult.

Regarding expectancies, the most notable finding was that participants expected to do best in their student goals, despite the fact that such goals were also viewed as most difficult. Presumably this is because they intended to invest strong effort in their student goals, as evidenced by the

high levels of commitment felt for student goals. In contrast, participants had the weakest expectations of success in their romance-related goals, concurring with the high rated difficulty of such goals. This pessimism may reflect the challenges of creating and maintaining satisfactory intimate relationships in the transient college environment (Tesch & Whitbourne, 1982). It also may be that participants see a less clear connection between effort and outcomes in romantic goals, compared to student goals.[5]

Predicting Change in Role-Satisfaction and Circumstances

Next, we examined our hypotheses concerning the effects of longitudinal goal-attainment upon positive changes in role circumstances and satisfaction. Again, we tested these hypotheses at both particular role and aggregate person-levels of analysis, using a series of multiple regression analyses. At the role-level, we conducted 10 multiple regressions in all, two for each of the five roles, focusing on statistically defined changes in role-satisfaction in one analysis and rated changes in role-circumstances in the other. We entered varying numbers of covariates into these analyses. For example, in predicting Time 2 Role-Satisfaction in the Friendship role, we entered friendship Time 1 Role-Satisfaction (to control for baseline friendship role-satisfaction and thus focus the analyses on change in satisfaction; Cohen & Cohen, 1983), and also the aggregated Time 1 Role-Satisfaction and aggregated Mid-Semester Progress variables (to control for person-level or between-subject differences on these variables; Kasser & Ryan, 1993, 1996; Sheldon et al., 1997). Of course, the Mid-Semester Progress score for the friendship-related goal also went into the equation, in order to test our prediction that progress predicts enhanced role-satisfaction. The analyses focusing on change in role-circumstances were conducted the same way, except they were simpler: There were no Time 1 variables to control for, because

5. Another explanation concerns the fact that romantic role-goals were more likely to be phrased in avoidant terms. Specifically, after coding all listed goals for their approach versus avoidance status (Elliot & Sheldon, 1997), we found romantic goals to be more avoidance-oriented than the other four types of goals (which did not differ among themselves). Past research shows that people have lower expectancies for attaining goals which are framed in avoidance terms (Elliot & Sheldon, 1997; Elliot, Sheldon, & Church, 1997).

these end-of-semester measures implicitly contained Time 1 information already, in the way that they were worded.

Table 4 provides the 10 beta coefficients representing the effects of role-specific progress upon changes in role-satisfaction and role-circumstances. Mid-Semester Progress was associated with positive changes in Satisfaction and Circumstances in the child, employee, romance, and student roles (although the coefficient representing the effect of progress upon change in role-circumstances within the child role did not attain significance, $p = .13$). Contradicting hypotheses, progress in the friendship-related goal did not predict positive change in friendship role-satisfaction, nor did it predict positive change in friendship role-circumstances. In fact, the beta coefficients obtained in the latter two analyses were essentially zero.

We next performed supplementary analyses in the 8 of 10 cases in which significant or near-significant coefficients emerged. Specifically, we controlled for participants' initial expectancies regarding each goal, to ensure that the progress-to-enhanced satisfaction/circumstances effects were not reducible to participants' initial feelings of confidence regarding their goals. Given the prominence of initial expectancies in contemporary theories of motivation and goal-setting (Bandura, 1989; Locke & Latham, 1990), it is important to rule them out as an alternative explanation. In all eight analyses, the coefficients for Mid-Semester

Table 4

Study 2: Beta Coefficients Representing the Effect of Mid-Semester Progress on Changes in Role-Satisfaction and Role-Circumstances

	Change in Role-Satisfaction	Change in Role-Circumstances
Mid-Semester Progress		
Child goal	.38**	.21
Employee goal	.47**	.44**
Romantic goal	.48**	.39**
Friend goal	.01	.01
Student goal	.43**	.36**

Note. Each coefficient represents a separate regression analysis. In these analyses Time 2 role-variables were the dependent measures. Various Time 1 and aggregated variables were entered into the equations as covariates, along with the progress measure specific to each role (see text).
**$p < .01$. *$p < .05$.

Progress were essentially unchanged with initial expectancies in the equation, indicating that the sense of doing well in goals over the semester has positive effects that are not reducible to initial expectancies.

Finally, we tested the hypothesis that progress predicts positive change, at the *aggregate* or between-subject level of analysis (Brunstein, 1993). In one analysis, we regressed the aggregated Time 2 Role-Satisfaction variable on aggregated Time 1 Role-Satisfaction and aggregated Mid-Semester Progress, finding a significant effect of Progress ($\beta = .47$, $p < .01$). Time 1 Role-Satisfaction was also significant in this analysis (i.e., the test-retest coefficient; $\beta = .33$, $p < .01$). Both of these effects remained significant when aggregate Expectancy was included in the equation. In the other analysis, we regressed the aggregated Change in Role-Circumstances variable on Mid-Semester Progress, also finding a significant effect of Progress ($\beta = .41$, $p < .01$), which also persisted when aggregate Expectancy was included in the equation.[6] In short, Study 2 established that making progress in goals predicts enhanced satisfaction and circumstances at both goal- and person-levels of analysis (with the exception of goals in the friendship role, discussed below).

BRIEF DISCUSSION

Study 2 replicated and extended the basic substantive findings of Study 1, using a different methodology in which goals were constrained to focus explicitly on particular roles. Study 2 also provided new information regarding differences between goals of different types, showing that different levels of commitment, expectancy, and difficulty are associated with goals in different social roles. Finally, Study 2 also included a longitudinal element, showing that attaining child, employee, romantic, and student (but not friendship) goals predicted increases in accompanying

6. To more concretely establish the consistency of this research with previous results, we also examined the aggregated Mid-Semester Progress variable as a predictor of changes in general life-satisfaction, from the beginning to the end of the semester. This would indicate, as in past research, that goal-attainment has beneficial effects on global well-being variables (Brunstein, 1993; Sheldon & Elliot, 1999; Sheldon & Kasser, 1998), as well as the specific role-satisfaction variables focused on within the current study. The 5-item Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985) was administered in both the first and the last take-home packet. A regression predicting Time 2 Life-Satisfaction from Time 1 Life-Satisfaction and Mid-Semester Progress found that the Life-Satisfaction test-retest coefficient was significant. More importantly, and consistent with past research, Mid-Semester Progress was also significant.

role-satisfaction and role-circumstances. Also, consistent with past research focusing on aggregated goal variables (Brunstein, 1993; Elliot & Sheldon, 1997), summed attainment was found to predict summed positive change in role satisfaction and circumstances. The attainment effects were found to be independent of participants' initial expectancies, indicating that initial expectancies cannot themselves account for the positive impact that goal-attainment has on participants' lives.

GENERAL DISCUSSION

We believe the research reported in this article is significant for both substantive and methodological reasons. Substantively speaking, these two studies verified some commonly held intuitions: namely, that people tend to enjoy their friendship and romance goals, finding them more intrinsically motivating and less externally motivated.[7] In contrast, student and employee goals appear to be relatively less enjoyable, and more often pursued with a sense of external or inner pressure. These results are thematically consistent with prior findings (Cantor et al., 1987, Langston & Cantor, 1989, Zirkel & Cantor, 1990) and were specifically predicted from self-determination theory (Deci & Ryan, 1985), which emphasizes the problematic effects that salient external rewards can have on motivation. Obviously, grades and money are quite salient within student and employee roles, a fact that may sometimes undermine individuals' ability to be intrinsically engaged within these roles.

One alternative explanation for the student goal effects involves the fact that student goals also were perceived as being the most difficult. Thus, they may fall out of the zone of optimal challenge defined by Csikszentmihalyi and Csikszentmihalyi's (1988) model of flow, instead tending toward a zone of tension and anxiety. This second explanation, however, would not account for the higher external and introjected motivation found for the employee role, because employee goals were not particularly difficult. Instead, scrutiny of the particular employee

7. Interestingly, Langston and Cantor (1989) showed that *affiliative* tasks are more aversive for a subset of students, specifically, those suffering from social anxiety. In the current research we did not examine the effects of such individual difference variables upon role-goal assessments, but we believe this represents an important avenue for research.

goals listed by participants suggested that they perceive their employee-related goals as tedious but necessary parts of their lives.

Interestingly, Study 2 also found that participants had the highest *expectancies* regarding student goals, despite their difficulty. We believe this somewhat counterintuitive pattern reflects the important developmental significance of the student role, and students' recognition of the impact that school achievement will have on their future options. The finding that participants were the most strongly committed to and identified with their student goals supports this supposition. In short, it appears that although student goals can be somewhat burdensome, they are tolerated and even embraced, because of their importance for the person's future.

In terms of the PLOC continuum, student goals appear to provide good examples of strongly extrinsic motives that have been fully internalized. Because they are concordant with core values, such identified motives are considered to be fully self-determined, despite not being pleasurable for their own sake (Deci & Ryan, 1985; Sheldon & Elliot, 1999).

To complete the summary of substantive results, Study 2 found that romantic goals, like student goals, are perceived as quite difficult. In contrast to student goals, however, participants had relatively low expectancies regarding romantic goals. This pessimism may indicate that participants were not especially strongly committed to their romantic goals, compared to their student goals, or that participants were not as clear on how to attain their romantic goals. Compared with romantic goals, *child* goals were perceived as relatively easy, and participants had high expectancies regarding them. The differences between the child role and the romantic role are readily interpretable from a developmental psychosocial perspective (Erikson, 1963)—our participants are moving away from parents at this period in their lives, and, thus, their child-related goals are relatively less salient and demanding than other goals. In contrast, the task of finding an intimate life-partner is becoming increasingly salient to these college-age participants, and the difficulty of this task is borne out by our data.

Methodologically speaking, these two studies have potentially important implications for the common practice of aggregating across personal goals. Again, this practice treats all goals as interchangeable indicators of a single latent construct. As just noted, however, we found that goals within different role-based content-categories can diverge substantially from each other, in predictable ways, on theoretically meaningful appraisal dimensions. To ignore such within-subject variation is to overlook

potentially important qualifying or interpretive information concerning one's results. In order to access and capitalize on such information, we would advise researchers to incorporate a method of classifying participants' idiographic goals into different content-categories within their studies. In this article we have focused on a social role-based categorization system, and have presented two new methods for linking goals to contents within-subjects. One method is based on a Likert-scale rating procedure, and yields data for correlational analysis. The other method is based on a categorical goal generation procedure, and yields data for analysis of mean differences. In these studies, both methods provided evidence that goals of different role types diverge within-subjects.

Demonstrating another type of divergence relevant to the aggregation issue, Study 1 found that theoretically important constructs can be differently associated between-subjects, as compared to within-subjects. Again, although role-level analyses found student- and employee-related goals to be *less* intrinsically motivated than other goals, person level analyses found the opposite pattern: Individuals whose goals are more generally relevant to these two roles tended to have *more* intrinsic motivation, overall. Thus, obviously, one might tell a very different story about the data depending on which level of analysis one happened to focus on. Within subjects, the story would focus on differences between the *tasks* that people face in student roles, as compared to interpersonal roles. Between-subjects, the story would focus on differences between *people* who are very oriented toward student tasks, as compared to people who are oriented more toward interpersonal tasks. Because within- and between-subject results can have very different conceptual interpretations, we recommend that goal researchers examine both levels of analysis whenever possible.

Despite these divergences between different types of goals, and between different levels of analysis, we also found several points of *convergence* across roles and across levels of analysis. First, Study 1 demonstrated that goals relevant to *any* of the five social roles tended to be associated with stronger identified motivation, a finding that was evidenced at both role- and person-levels of analysis. Study 2 found a similar pattern, in that all five contents of goals were accompanied by relatively strong identified motivation. We have argued that this occurred because all five of the social roles that we studied are central and salient

domains of behavior for participants, just as we assumed in selecting them for study.

Study 2 also demonstrated another sort of convergence among goals of different types, in that those who made progress in child-, employee-, romantic-, and student-related goals (but not in friendship-related goals; see discussion below) later reported enhanced satisfaction and positively changed circumstances within those roles. This pattern also was demonstrated at the aggregate or between-subject level of analysis. We believe this cross-level convergence is particularly important, because the idea that attaining goals leads to improved life-circumstances is a central assumption of most goal researchers. These data suggest that it is safe to make this assumption, both within- and between-subjects.

A final form of convergence occurred between our social role content-analytical system and Cantor's life-task system. Specifically, our results regarding "friend" and "student" roles were quite similar to those of Cantor and her associates regarding "interpersonal" and "academic" life tasks. These convergent results suggest that the life-task system does not suffer much, if at all, from the potential problems discussed in the introduction. Thus it appears that researchers might confidently choose to use either content-analytical system, depending on their questions and theoretical purposes. The primary advantage of the new assessment methodology is that it allows participants to retain and assess whatever counternormative goals they might have (and a significant number of our participants *did* list such goals). This may allow for greater representativeness and generalizability in the data. The new methodology also may provide a basis for selecting out and studying participants whose goal-systems run "against" the predominant tasks characterizing their developmental period, participants who may sometimes be of special interest.

To return to substantive issues, why did making progress in friendship goals not predict enhanced friendship role-satisfaction or role-circumstances? That is, what is different about the friendship role? We can offer a few speculations. First, the pattern of means in Table 3 demonstrates that participants expected to enjoy their friendship goals, but were not especially committed to or identified with them. Furthermore, these goals were not very difficult, and were relatively unpressured. In short, participants may not have been very serious about friendship goals, so that attaining them may not have had much effect on their general feelings within the role. A related explanation is that the

quasi-experimental procedure employed in Study 2 may have induced participants to mentally "rotate" their natural goals, as it were, to focus them exclusively on and within particular role-categories. Perhaps this forced participants to list more friendship goals than they otherwise would have generated, trivializing such goals.

The latter speculation, if correct, may reveal a limitation of the role-based assessment approach introduced in Study 2: Rather than forcing participants to rate a normative task that is not really a concern for them (as may occur with the Cantor methodology), our methodology may instead force participants to generate a goal within a domain that is not really a concern for them. This reveals the inherent difficulties that arise when one tries to "graft" a nomothetic conceptual system onto an idiographic measure. The method of Study 1 offers perhaps the best solution to this dilemma, because in this method participants are completely unconstrained in the goals they can generate. Notably, however, substantive results in Study 1 were somewhat weaker than in Study 2, suggesting that there may sometimes be a trade-off between "idiographic purity" and "nomothetic power."

As a final commentary, let us draw attention to the profusion of new understanding that has been gained via analysis of hierarchically ordered data. Recent research focusing on days nested within persons (Marco & Suls, 1993; Reis, Sheldon, Gable, Roscoe, & Ryan, in press; Sheldon, Ryan, & Reis, 1996); goals nested within persons (Omodei & Wearing, 1990; Sheldon & Elliot, 1998); roles nested within persons (Donahue et al., 1993; Sheldon et al., 1997), values nested within persons (Kasser & Ryan, 1993, 1996), and persons nested within groups (Sheldon & McGregor, in press; Wilson, 1997) all demonstrate the theoretical utility of multilevel thinking. Thus, we urge researchers to conceptualize and analyze their data at multiple levels, whenever possible. At the very least, they should consider the possibility that their primary variables are "confounded" by unmeasured higher order variables, or are "compounded" by divergences between the lower order variables that make them up. Better still, these "confounds and compounds" can be unraveled, yielding new knowledge for personality psychologists.

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Comparing Personality Scales Across Time: An Illustrative Study of Validity and Consistency in Life-Span Archival Data

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ABSTRACT   The goals of this study were: (a) to examine whether personality scales, meaningful in contemporary terms, could be derived from archival data; and (b) to use these scales to aid our understanding of the relation of personality to mortality. NEO PI-R data and a battery of archival items, taken from Terman's Life Cycle Study, were collected on two new samples (sample 1 mean age = 11.9, $n = 167$; sample 2 mean age = 22.2, $n = 203$). Measurement invariance of the archival scales was assessed, and validity was examined using both rational analyses and associations with the Five Factor Model. It was demonstrated that

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