

Coherence and Congruence: Two Aspects of Personality Integration

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Coherence and congruence-based measures of personality integration were related to a variety of healthy personality characteristics. Functional coherence was defined as occurring when participants' "personal strivings" (R. A. Emmons, 1986) help bring about each other or help bring about higher level goals. Organismic congruence was defined as occurring when participants strive for self-determined reasons or when strivings help bring about intrinsic rather than extrinsic higher level goals. Study 1 found the integration measures were related to each other and to inventory measures of health and well-being. Study 2 showed that these goal integration measures were also related to role system integration and were prospective predictors of daily mood, vitality, and engagement in meaningful as opposed to distracting activities.

Optimal psychological health and well-being occur when the different aspects of personality are integrated into a relatively harmonious whole (Allport, 1937; Deci & Ryan, 1991; Donahue, Robins, Roberts, & John, 1993; Harter & Monsour, 1992; Seeman, 1983). Indeed, past research has shown that measures of personality integration predict many psychological health outcomes. For example, people high in integration are more self-actualized (Shostrom, 1964), vital (Barron, 1954), and autonomous (Koestner, Bernieri, & Zuckerman, 1992); they are also open to their own experiences (Foreman, 1966; Vargas, 1966) and are empathic with others' experiences (McClain, 1969; Swan, 1970). Integrated people also typically score high on indexes of self-esteem, subjective well-being, and adjustment (Fitts et al., 1971; Seeman, 1983). Clearly, personality integration is an important variable for understanding psychological health. However, the topic has received surprisingly little attention in the modern empirical literature.

In this article we outline a model of personality integration that draws from recent theoretical perspectives on self-regulation (e.g., Carver & Scheier, 1981, 1990; Deci & Ryan, 1985b, 1991) and then present relevant measures based on the "personal striving" goal construct (Emmons, 1986, 1989). We propose that integration occurs when the aspects of one's personality both cohere with one another and are congruent with organismic needs. In terms of personal goal systems, personality is coherent when goals help bring about both same-level and higher level goals. Goal systems are congruent when goals feel genuinely chosen and are expressive of intrinsically satisfying

values such as growth, intimacy, and community. Below we review theory and research regarding these claims.

Many theorists assume that integrated functioning within a behavioral or cognitive system involves the subsumption of lower level elements to the regulatory control of higher levels of a hierarchy. For example, Werner's (1957) orthogenetic principle states that integration occurs when disparate elements are brought together via their common connections to higher levels of the system. Similarly, Miller (1978) defined integration as occurring "when multiple, simultaneous, separate processes of a system work under control of centralized decision making, toward a common purpose or goal" (p. 89). More recently, Carver and Scheier's control theory (1981, 1990) specifies that optimal functioning occurs when lower level activity is effectively regulated by higher level standards.

Thus, for a goal system, we propose that *vertical coherence* exists when lower level goals are consistent with or regulated by higher level goals. To illustrate this, Figure 1 presents two simplified action hierarchies (Carver & Scheier, 1981, 1982; Powers, 1973) in which the goals are the same at a lower level but different at a higher level. Specifically, two people might both be trying (among other things) to "get better at playing the guitar," "cultivate a strange personal appearance," and "acquire expensive possessions." Person A, who attempts to regulate this set of lower level goals in terms of the higher level goal of "becoming famous," would probably more effectively coordinate the varying and sometimes conflicting demands of these goals than Person B, who attempts to subsume these everyday strivings under the overarching aspiration of "helping the world become a better place." As Figure 1 illustrates, the goal system of Person A is likely to be more vertically coherent than that of Person B.

Sheldon and Emmons (in press) operationalized this aspect of integration by assessing the helpfulness of *personal strivings* (Emmons, 1986, 1989) in bringing about *possible selves* (Markus & Ruvolo, 1989). Strivings are midlevel goals (Emmons, 1989) that represent what people are characteristically trying to do in their everyday behavior. In contrast, possible selves are higher level goals (Hyland, 1988; Read & Miller, 1989) that represent what people hope to become (or avoid

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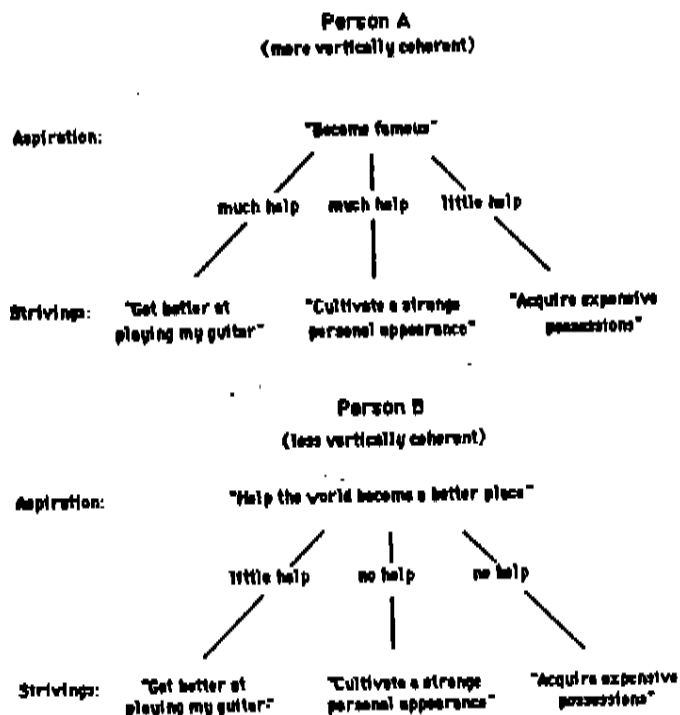


Figure 1. Vertical coherence within two different action systems.

becoming) in the future. Sheldon and Emmons (in press) found that people with more helpful connections between strivings and possible selves reported more current and past success in their strivings, more commitment to their strivings, and less difficulty and differentiation in their strivings.

In addition to lower-to-higher-level connections, systemic coherence (e.g., Harter & Monsour, 1992; Little, 1989) also implies connections among elements at the same level of a hierarchy. In terms of a goal system, what we call *horizontal coherence* occurs when success at particular goals contributes to success at other goals at the same level of the system. For example, characteristic strivings such as "develop the caring side of myself" and "try to be a good parent" might be same-level goals that generally help one another. In contrast, the goal "cultivate a strange personal appearance" is likely to conflict with the goal "acquire expensive possessions" because most avenues for acquiring expensive possessions require sober self-presentation. In terms of Figure 1, horizontal coherence concerns the extent to which the three lower level goals help each other. Supporting the importance of horizontal coherence, Emmons and King (1988) found lower physical and psychological well-being in people whose strivings were more conflictual than instrumental.

Horizontal and vertical coherence are likely to be related. Speaking from a bottom-up perspective, connections at lower levels presumably make vertical coherence easier to achieve. Speaking from a top-down perspective, higher level synthesis can help forge connections among lower level elements. For these reasons, measures that assess vertical and horizontal coherence are likely to be positively correlated.

Although coherence among elements within a system is one

aspect of personality integration, humanistic concepts of integration emphasize that elements must accord with organismic needs. For example, Rogers (1961) emphasized that integration entails developing greater congruence between behavior and more authentic parts of the person. Maslow (1954) similarly viewed the integrated or self-actualizing person as being in touch with higher, growth-oriented needs. More recently, Deci and Ryan's (1985b, 1991) self-determination theory suggests that personality integration occurs through the efforts of an "organismic self" (Ryan, 1993) to attain greater experiential autonomy by internalizing the regulation of action. Self-determination theory proposes that as autonomy increases, people behave in ways that enable further development and growth. In contrast, lack of integration is seen in nonautonomous or "controlled" people, who are somewhat out of contact with their organismic needs (Deci & Ryan, 1991; Ryan, 1993).

One way to operationalize the self-determination concept of congruence is to consider the perceived locus of causality for behavior (Heider, 1958). For example, Ryan and Connell (1989) empirically defined a continuum of reasons for acting, ranging from external to introjected (two controlled reasons) to identified to intrinsic (two autonomous reasons). Ryan and Connell (1989) found that acting for more autonomous reasons was associated with positive outcomes and better adjustment in children's academic motivation. This relationship has also been confirmed in studies of college students' academic motivation (Vallerand & Bissonnette, 1992) and in studies of religious engagement (O'Connor & Vallerand, 1990; Ryan, Rigby, & King, 1993). Figure 2 graphically presents this concept of congruence, in which some of a person's actions are autonomous and guided by organismic needs, whereas other actions are controlled and do not satisfy organismic needs.

A second way that theorists have conceptualized organismic congruence is by considering the content of people's goals and values. For example, Rogers (1964) suggested that values and life goals can be more or less organismically based. Similarly, Fromm (1976) contrasted a "having" or consummatory orientation that values possessions and status with a "being" orientation that values personal growth and love. Accordingly, Kasser and Ryan (in press) distinguished between intrinsic and extrinsic values and goals. Intrinsic goals are oriented toward growth-relevant, inherently satisfying activities, whereas extrinsic goals are more focused on the attainment of external rewards and praise. This distinction between intrinsic and extrinsic goal

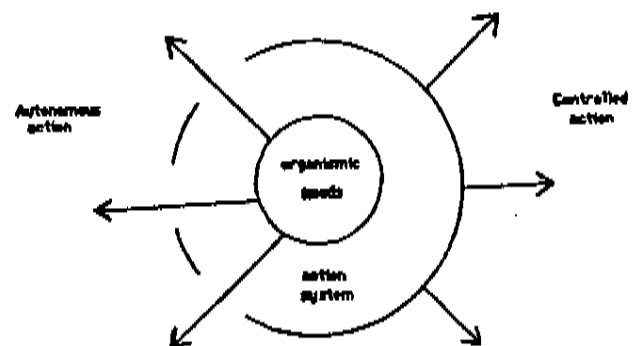


Figure 2. Schematic diagram of organismically congruent action.

content parallels the much researched distinction between intrinsically and extrinsically motivated behavior (reviewed in Deci & Ryan, 1985b). Viewed in terms of Figure 2, behavior stemming from intrinsic goals is also more likely to satisfy organismic needs.

Supporting the importance of this distinction, Kasser and Ryan (1993) contrasted aspirations for financial success (an extrinsic aspiration) with those for self-acceptance, affiliation, or community feeling (three intrinsic aspirations). Across three varied samples, they showed that more materially oriented people were higher in depression and anxiety, evidenced less self-actualization and vitality, and were rated by interviewers as higher in behavioral disorders and lower in global functioning and social productivity. These findings, which have been expanded by recent studies (e.g., Kasser & Ryan, in press; Kasser, Ryan, Zax, & Sameroff, in press), are consistent with the supposition that well-being and integration occur when one is more oriented toward intrinsic rather than extrinsic goals.

To recapitulate, we propose that personality integration can be conceptualized in terms of both coherence and congruence. Within a goal system, coherence involves consistency between goals at both the same level (horizontal) and at different levels (vertical). Congruence involves pursuing goals for self-determined reasons and being oriented toward goals that entail intrinsically satisfying activity. In brief, coherence involves how goals connect with each other, and congruence involves how goals connect with organismic needs.

In the present studies, we operationalized these concepts by using the personal-striving construct (Emmons, 1986) as a common unit of analysis. Following Sheldon and Emmons (in press), we measured vertical coherence by assessing how helpful strivings are in bringing about possible futures embodying a range of values. Second, we operationalized horizontal coherence as the extent to which striving successes facilitate, rather than hinder, other striving successes (Emmons & King, 1988). Third, we operationalized congruence as *striving self-determination*, the extent to which people strive because of autonomous, as opposed to controlled, reasons (Ryan & Connell, 1989). Finally, we considered the congruence of strivings in a second way by examining separately the extent to which strivings help intrinsic and extrinsic possible futures (Kasser & Ryan, 1993, in press).

The general predictions for this research were as follows. First, we expected that the integration measures would be positively related to each other, as all are conceived of as part and parcel of a basic organizational process fundamental to developing life (von Bertalanffy, 1968; Piaget, 1971; Rogers, 1963; Ryan, 1993). In addition, we expected that both coherence and congruence measures would be correlated with a broad range of psychological health characteristics, including lower negative affect and control orientation, and higher autonomy orientation, self-actualization, empathy, vitality, positive affect, openness to experience, and self-esteem. To test our claim that both coherence and congruence are important for understanding psychological health, we used regression analyses to assess the extent to which the measures made independent contributions in predicting well-being outcomes. Finally, we predicted that intrinsic vertical coherence would be related to more positive outcomes than would extrinsic vertical coherence because the

former measure incorporates both congruence and coherence and the latter measure incorporates only the coherence facet of personality integration.

Study 1

Method

Participants

Participants were 161 psychology students (93 women and 68 men) at a private university who participated for extra credit.

Procedures

Six sequential packets of questionnaires were available throughout the semester. Participants came at scheduled times to complete packets in the presence of a trained research assistant. Because participants did not have to complete every packet, sample sizes differed across the dependent measures.

Measures

After reading instructions and examples, participants ($n = 161$) were asked to generate at least 10 personal strivings, defined as "what you typically or characteristically are trying to do in your everyday behavior" (Emmons, 1986). Participants were specifically asked to think about their daily behavior in terms of its implicit broad intentions rather than in terms of desires for the future. Examples of strivings included "seek new and exciting experiences," "persuade others that I am right," and "avoid feeling inferior to others."

Participants then rated their 10 most characteristic strivings as to how much they pursued them for each of four reasons, using a scale ranging from 1 (*not at all because of this reason*) to 9 (*completely because of this reason*). External reasons were defined as "striving because somebody else wants you to or because you'll get something from somebody if you do." Introjected reasons were defined as "striving because you would feel ashamed, guilty, or anxious if you didn't strive for this." Identified reasons were defined as "striving because you really believe it's an important goal to have—you endorse it freely and wholeheartedly." Intrinsic reasons were defined as "striving purely because of the fun and enjoyment that striving provides you." As in previous research on perceived reasons for acting (cf. Grolnick & Ryan, 1987; Grolnick, Ryan, & Deci, 1991; Vallerand & Bissonnette, 1992), a weighted striving self-determination score was derived by first doubling the external and intrinsic scores (the two extremes of the continuum) and then subtracting the sum of the 10 external and 10 introjected scores from the sum of the 10 identified and 10 intrinsic scores ($M = 87.0$, $SD = 67.9$). The internal consistency (α) of this 40-item variable was $\alpha = .89$.

Participants then rated each striving as to how much it helped take them toward possible futures in six culturally endorsed value domains (Kasser & Ryan, in press), using a scale ranging from 1 (*no help at all*) to 9 (*very much help*). Participants were presented with the following three intrinsic futures: (a) self-acceptance and personal growth: being happy and having a very meaningful life; (b) intimacy and friendship: having many close and caring relationships with others; and (c) societal contribution: working to help make the world a better place. The other three futures involved extrinsic domains more likely to be associated with external rewards or praise: (a) financial success: having a job that pays very well and having a lot of nice possessions; (b) fame and recognition: being known and admired by many people; and (c) physical appearance: looking good and being attractive to others. Helpfulness ratings were summed across all six content domains to derive the overall

Table 1
Definitions and Computational Procedures for Goal-Based Integration Measures

Measures	Definition and computation
Strivings	Enduring personal goals. Elicited by asking participants to give 10 statements regarding what they typically try to do in their everyday behaviors.
Striving self-determination	The extent to which one strives for autonomous more than control reasons. It is a 40-item measure computed by an algorithm combining intrinsic, identified, introjected, and external reasons for striving.
Vertical coherence	The extent to which strivings help bring about possible futures. It is a 60-item measure computed by summing ratings of striving helpfulness to six possible futures.
Intrinsic vertical coherence	The extent to which strivings help bring about the three intrinsic possible futures of growth, intimacy, and community (30 items).
Extrinsic vertical coherence	The extent to which strivings help bring about the three extrinsic possible futures of money, fame, and appearance (30 items).
Horizontal coherence	The extent to which striving successes help other strivings. It is computed by summing ratings of striving helpfulness across the 45 different striving pairs.

vertical coherence measure ($M = 337.9$, $SD = 78.6$; $\alpha = .94$).¹ Ratings were also summed across the three intrinsic domains to obtain a measure of intrinsic vertical coherence ($M = 184.9$, $SD = 41.4$; $\alpha = .90$) and across the three extrinsic domains to obtain a measure of extrinsic vertical coherence ($M = 153.0$, $SD = 48.7$; $\alpha = .92$). To investigate the validity of the a priori distinction between intrinsic and extrinsic possible futures, we subjected the helpfulness sums for each of the six domains to principal-components analysis. Two components emerged, accounting for 69.8% of the variance. Personal growth, intimacy and friendship, and societal contribution scores all loaded .70 or above on the first component, and the three extrinsic scores all loaded .70 or above on the second component.

Finally, participants wrote their 10 strivings down the sides and across the top of a 10×10 matrix and rated each pair of strivings as to how much being successful at one striving affected the other striving. The scale used ranged from 1 (*very much harm*) to 4 (*no effect at all*) to 7 (*very much help*). A global horizontal coherence score ($M = 222.4$, $SD = 36.0$) was computed by summing the 45 ratings. Table 1 summarizes the definitions and computational procedures for the integration measures.

Outcome Measures

General Causality Orientations Scale (Deci & Ryan, 1985a). Participants rated the likelihood that they would respond in an autonomous way and in a controlled way to 12 vignettes covering various life domains. Autonomous responses involved making choices, accepting challenges, and supporting others' autonomy, and controlled responses involved focusing on outcomes and contingencies, and attempting to make others behave in specified ways. Deci and Ryan (1985a) provided reliability and validity information for these measures of motivational orientation. Cronbach alphas were .90 for autonomy orientation ($n = 144$) and .76 for control orientation ($n = 148$) in this sample.

Self-Actualization Scale (Jones & Crandall, 1986). Fifteen items assessed participants' level of self-actualization. In the Maslovian tradition (1954), this referred to a person's self-acceptance, creativity, spontaneity, and ability to have deep relationships. Jones and Crandall

(1986) reported adequate reliability and validity information on this measure. Cronbach alpha was .58 in this sample ($n = 152$).

Psychological Vitality Scale (Ryan & Frederick, 1994). This seven-item measure was designed to tap the energization aspect of motivation independent of the directive aspect, (i.e., whether the person feels alive and vigorous). Recent research with college students and adults has demonstrated this measure's reliability and its relationship to both subjective well-being and behavioral outcomes; Cronbach alpha in this sample was .85 ($n = 149$).

Positive Affect/Negative Affect Scale (Watson, Tellegen, & Clark, 1988). Participants rated how often they generally experience each of 10 positive and 10 negative moods. Separate positive and negative affect scores were computed from this measure by averaging the relevant adjectives. Watson et al. (1988) reported the measure's reliability and showed that the two scores predict psychopathology, depression, and anxiety. In this sample, alphas were .86 for positive affect ($n = 140$) and .87 for negative affect ($n = 141$).

Interpersonal Reactivity Index (Davis, 1980). We used the seven-item Perspective-Taking subscale of the Interpersonal Reactivity Index. This subscale assesses cognitive empathy (i.e., one's ability and willingness to consider the point of view of others). Scores on this measure

¹ In an attempt to show that this vertical coherence measure is commensurate with Sheldon and Emmons's (in press) striving possible-self measure, we had participants rate how dissimilar strivings are (Emmons & King, 1989), how committed they are to each striving, and how difficult each striving is for them, using a 1 (*not at all*) to 9 (*very much*) scale (Emmons, 1986). They also completed the private self-consciousness scale (Fenigstein, Scheier, & Buss, 1975), which Sheldon and Emmons (in press) showed was related to their measure of goal coherence. The vertical coherence measure in the current study was positively correlated with striving commitment ($r = .29$, $p < .01$) and negatively correlated with striving dissimilarity ($r = -.37$, $p < .01$), replicating Sheldon and Emmons's (in press) findings. Although vertical coherence was not negatively related to striving difficulty ($r = .08$), it was positively correlated ($r = .33$, $p < .01$) with private self-consciousness.

Table 2
Simple Correlations of Goal-Based Integration Measures With Psychological Health Outcomes: Study 1

Psychological health outcomes	Striving self-determination	Horizontal coherence	Vertical coherence	Intrinsic vertical coherence	Extrinsic vertical coherence
Autonomy orientation	.17**	.00	.23***	.27***	.13
Control orientation	-.15*	.07	.24***	.02	.37***
Self-actualization	.26***	.09	.10	.28***	-.07
Vitality	.20**	.08	.33***	.30***	.27***
Positive affect	.29***	.08	.30***	.34***	.18**
Negative affect	-.22***	-.03	.03	-.07	.10
Openness	.30***	.08	.08	.27***	-.09
Cognitive empathy	.26***	.09	.19**	.35***	.01
Self-esteem	.28***	-.08	-.08	.19**	-.02

* $p < .10$. ** $p < .05$. *** $p < .01$.

have been associated with satisfaction in close and romantic relationships (Davis & Oatthout, 1987; Franzoi, Davis, & Young, 1985). Alpha was .81 in this sample ($n = 147$).

Openness to Experience (Costa & McCrae, 1985). This 36-item subscale of the NEO Personality Inventory assesses openness to fantasy, feelings, and aesthetic experience, tolerance for new ideas and values, and willingness to try new things. People who score high on this scale evidence greater creativity and flexibility (McCrae, 1987). In this sample, alpha was .88 ($n = 112$).

Rosenberg Self-Esteem Inventory (Rosenberg, 1965). This often-used, 10-item scale assesses global feelings of self-worth. Scores on this self-esteem measure have been associated with depression, psychosomatic symptoms, and effective functioning (Robinson, Shaver, & Wrightsman, 1991). In this sample, alpha was .88 ($n = 137$).

Results

Because t tests revealed that there were no sex differences on striving self-determination, vertical coherence, or horizontal coherence, all of the analyses reported below were collapsed across sex. As hypothesized, the three primary measures of integration were significantly positively correlated with each other. People high in horizontal coherence were also high in vertical coherence ($r = .39, p < .01$). In addition, striving self-determination was positively correlated with both horizontal coherence ($r = .40, p < .01$) and vertical coherence ($r = .37, p < .01$). These correlations support the suggestion that the measures represent aspects of a single organizational process.

Table 2 presents simple correlations of striving self-determination, horizontal coherence, and vertical coherence with the various outcome measures.² Participants who strove for more self-determined reasons were higher in autonomy orientation, self-actualization, vitality, positive affect, openness, cognitive empathy, and self-esteem, and lower in negative affect. They were also marginally lower in control orientation. Vertical coherence was positively related to five of the dependent measures: Specifically, people who reported more helpful connections between strivings and the six possible futures were also higher in vitality, positive affect, empathy, and both autonomy orientation and control orientation. Surprisingly, horizontal coherence (the extent to which strivings helped each other) was not associated with any of the dependent measures.

Next, regression analyses were conducted in which the three

primary integration measures were simultaneously entered as predictors of each outcome measure (see Table 3). In partial support of the suggestion that both coherence and congruence are important, these analyses indicate that striving self-determination and vertical coherence made independent predictive contributions to autonomy and control orientation and to positive affect. Vertical coherence was also associated with vitality. However, horizontal coherence was still unrelated to positive outcomes. The amount of variance accounted for in these regressions, although not large, was significant.

Next, we examined the extrinsic and intrinsic facets of the vertical coherence variable. Although they were strongly correlated with each other ($r = .52, p < .01$), they behaved quite differently in their relations with the other two integration measures. Intrinsic vertical coherence was more strongly correlated with striving self-determination ($r = .55, p < .01$) than was extrinsic vertical coherence ($r = .13, p < .10; t[160] = 6.57, p < .01$). Intrinsic vertical coherence was also more strongly correlated with horizontal coherence ($r = .45, p < .01$) than was extrinsic vertical coherence ($r = .26, p < .01; t[160] = 2.72, p < .01$). Furthermore, as can be seen in Table 2, the intrinsic vertical coherence variable was related to more positive outcomes than was extrinsic vertical coherence. Specifically, the intrinsic facet was significantly positively correlated with self-actualization, vitality, positive affect, openness, cognitive empathy, and self-esteem, whereas the extrinsic facet was significantly correlated with only vitality and positive affect. Also, the finding that the overall vertical coherence measure was positively associated with both the autonomy and control motivational orientations became understandable; the intrinsic facet of the vertical coherence variable was correlated with autonomy orientation, and the extrinsic facet was correlated with control orientation.

Because the vertical coherence variable was bidimensional, we split it into two variables for a second set of regression analyses paralleling those reported in Table 3. Table 4 presents the

² To assess the extent of collinearity among the nine outcome measures, we computed a table of intercorrelations ($M = .25, SD = .14$). The correlations ranged from .02 to .56 in absolute value. These results suggest a low degree of collinearity among these measures.

Table 3
Semipartial Correlations of Striving Self-Determination, Horizontal Coherence, and Vertical Coherence With Psychological Health Outcomes: Study 1

Psychological health outcomes	Striving self-determination β	Horizontal coherence β	Vertical coherence β	R^2
Autonomy orientation	.16*	-.15*	.24***	.08***
Control orientation	-.27***	.06	.31***	.12***
Self-actualization	.26***	-.02	.02	.07**
Vitality	.12	-.08	.32***	.12***
Positive affect	.24***	-.11	.26***	.14***
Negative affect	-.26***	.03	.11	.06**
Openness	.31***	-.04	.01	.09**
Cognitive empathy	.23**	-.03	.12	.08***
Self-esteem	.29***	-.04	.00	.08**

Note. Significance of R^2 statistics based on F tests with somewhat varying degrees of freedom.

* $p < .10$. ** $p < .05$. *** $p < .01$.

standardized regression coefficients resulting when each dependent variable was simultaneously regressed onto striving self-determination, horizontal coherence, intrinsic vertical coherence, and extrinsic vertical coherence. As can be seen, intrinsic vertical coherence was significantly positively associated with autonomy orientation, self-actualization, positive affect, openness, and empathy. In contrast, the extrinsic vertical coherence variable was then negatively associated with self-actualization, openness and empathy. However, it was still positively associated with vitality. Notably, the striving self-determination variable lost some strength as a predictor in these analyses. Note also that, for many of the dependent variables, the amounts of variance accounted for in Table 4 were greater than those in Table 3. The vertical coherence variable became a stronger and more differentiated predictor of the outcome variables when we considered the need congruence of the possible futures that strivings help.

Brief Discussion

Study 1 presents three basic measures of goal integration and demonstrates that whereas all are significantly associated with

each other, they are differentially associated with other indexes of healthy personality functioning. Although striving self-determination was correlated with all of the outcomes, overall vertical coherence predicted several outcomes, and horizontal coherence did not predict any outcomes. The same pattern of results emerged when the three integration measures were simultaneously entered into regression equations.

The reason for the weakness of the overall vertical coherence variable relative to the striving self-determination variable became apparent when we broke the measure into intrinsic and extrinsic facets. As expected, the intrinsic vertical coherence measure (which included both the coherence and congruence aspects of integration) was correlated with more positive outcomes than was the extrinsic vertical coherence measure (which included only the coherence aspect of integration). In further concordance with the idea that people are better off when they are both coherent and congruent, the regression analyses in Table 4 indicate that the intrinsic vertical coherence measure was actually a somewhat stronger predictor than the striving self-determination variable (which included only congruence). In Study 2, we examined whether this pattern would occur again.

Table 4
Semipartial Correlations of Striving Self-Determination, Horizontal Coherence, and Intrinsic and Extrinsic Vertical Coherence With Psychological Health Outcomes: Study 1

Psychological health outcomes	Striving self-determination β	Horizontal coherence β	Intrinsic vertical coherence β	Extrinsic vertical coherence β	R^2
Autonomy orientation	.09	-.16*	.27**	.04	.09***
Control orientation	-.13	.08	-.16	.44***	.18***
Self-actualization	.11	-.06	.37***	-.25***	.14***
Vitality	.13	-.08	.18	.19**	.12***
Positive affect	.20**	-.11	.24**	.09	.15***
Negative affect	-.23**	.04	-.01	.12	.06*
Openness	.16	-.07	.36***	-.27**	.16***
Cognitive empathy	.06	-.07	.43***	-.19**	.16***
Self-esteem	.23**	-.06	.13	-.09	.09**

Note. Significance of R^2 statistics based on F tests with somewhat varying degrees of freedom.

* $p < .10$. ** $p < .05$. *** $p < .01$.

Somewhat puzzling in Study 1 was the failure of horizontal coherence to predict any of the psychological health measures. This may have been due to the fact that Emmons and King (1988) focused primarily on measures of *ill-being*, such as depression and illness, whereas Study 1 focused primarily on measures of *well-being*. Another explanation is that having helpful relations between strivings may be beneficial only if the strivings involved are pursued for autonomous reasons or if they are leading toward desired possible futures. We leave these issues for future research.

Although generally encouraging, these data are open to a number of criticisms. First, new measures were developed in Study 1, and their reliability and validity need further substantiation. Second, the outcome variables were traitlike inventories and may not accurately reflect well-being in daily life. Third, because many of the measures were administered concurrently, we have provided no evidence regarding the possible causal role of integration in predicting mental health. Finally, we used only goal constructs to assess personality integration; it would be desirable to see whether the goal-based measures are predictive of integration as measured within other personality spheres. Study 2 addressed these questions.

Study 2

Striving self-determination and vertical coherence were again assessed in Study 2; horizontal coherence data were not collected, for reasons of economy and because they were not predictive of any positive outcomes in Study 1. As a further construct-validation effort, both the temporal stability of the striving self-determination measure and its convergence with a measure of daily self-determination were assessed. Some of the same inventory measures were again administered; in addition, we administered the Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985), which assesses a major component of subjective well-being (Diener, 1984).

To investigate the extent to which these goal-based measures of integration reflect personality integration in general, we also examined their relationship to role-based measures recently developed by Harter and Monsour (1992). These investigators studied the development of the ability to integrate different role-related self-aspects and found that conflict between self-aspects peaks in the 9th grade and lessens by the 11th grade. Harter and Monsour suggested that as adolescents develop more sophisticated formal operational capabilities (Fischer, 1980), they acquire the ability to integrate and thus resolve conflicts within their personality, leading to a more unified self-theory (Epstein, 1973). Following Harter and Monsour, we assessed how positively self-roles are experienced, how much they conflict with each other, and how much distress is caused by role conflicts. Rather than use these three measures to examine age-graded developmental change, however, we used them as individual-difference variables. Assuming that the *goal* system integration measures tap into a general state of personality integration, we hypothesized that they would be positively associated with these three markers of an integrated *role* system.

Other more naturally occurring variables were also examined in Study 2. Participants completed twice-daily reports for 2 weeks concerning positive mood, negative mood, and feelings

of vitality. We expected that the goal integration measures would be prospective predictors of these indexes. Participants also filled out an activity checklist with each diary report, containing two categories of activities: those likely to involve meaningful engagement (i.e., helping a friend), and those more likely to function as distracters or stress reducers (i.e., watching television). We predicted that striving self-determination and intrinsic vertical coherence would be related to more frequent engagement in meaningful activities because congruence allows people to act in accordance with organismic needs. In contrast, we predicted that extrinsic vertical coherence would be associated with more frequent engagement in distracting activities because extrinsically oriented individuals presumably experience more pressure and tension in their lives (Kasser & Ryan, in press); therefore, they may use activities such as watching television or drinking as a means of managing frustration or obtaining superficial gratification.

Method

Participants

Participants were 113 students (29 men and 84 women) at a private university, who completed assessment materials for extra credit in a class in developmental psychology.

Procedures

At the beginning of the semester, participants came to an evening session and completed a packet of assessment materials, including striving measures and other self-report questionnaires. Eight weeks later, as part of an assignment in which they read Harter and Monsour's (1992) article, "Developmental Analysis of Conflict Caused by Opposing Attributes in the Adolescent Self-Portrait," participants created diagrams representing their current selves. At about the same time, participants completed reports twice daily over a 2-week period. Near the end of the semester, participants came to another evening session in which they completed more measures. Not all participants completed all materials, so again, sample sizes differed somewhat across the dependent measures.

Measures

Strivings. As in Study 1, participants ($n = 113$) first generated strivings and then selected the 10 most characteristic ones for further ratings. Participants rated each striving on the four reasons for striving (ranging from external to intrinsic). A striving self-determination variable was computed as in Study 1 ($M = 94.7$, $SD = 68.9$; $\alpha = .90$). In the second evening session 10 weeks later, striving self-determination was again measured by having participants rate the reasons they strive for the same 10 strivings that they had rated before. The striving self-determination index derived from the first session was used in the analyses reported below.

Next, participants rated how helpful each striving was in bringing about possible futures in the six content domains used previously. An overall vertical coherence variable was again computed by summing helpfulness ratings across all 60 striving-possible future pairs ($M = 342.0$, $SD = 84.7$; $\alpha = .94$). As before, this variable was broken down into intrinsic vertical coherence ($M = 189.4$, $SD = 41.4$; $\alpha = .89$) and extrinsic vertical coherence ($M = 152.6$, $SD = 51.9$; $\alpha = .93$).

Inventory outcome measures. To replicate some of Study 1's findings, we again administered the Self-Actualization scale ($n = 107$; Jones & Crandall, 1986; $\alpha = .72$) and the Autonomy and Control Orientation

subscales from the General Causality Orientations Scale ($n = 107$; Deci & Ryan, 1985a; autonomy $\alpha = .82$, control $\alpha = .72$). In addition, participants completed the five-item Satisfaction With Life Scale ($n = 113$; Diener et al., 1985; $\alpha = .84$).

Role system diagrams. Participants mapped out their current conceptions of themselves, following Harter and Monsour's (1992) methodology. That is, participants generated six trait adjectives describing themselves in each of four role domains: with parents, with friends, in class, and in romantic relationships. Participants were told the same trait could be used in more than one role domain. Next, participants rated each of their 24 traits as to whether it was something they liked or disliked about themselves. Participants then identified traits that conflicted with each other and rated each conflict as to how much distress it caused them, on a scale ranging from 1 (*no distress*) to 9 (*very much distress*). For each participant, we computed the number of traits given a positive rating ($n = 106$, $M = 18.4$, $SD = 3.2$), the number of conflicting traits ($n = 108$, $M = 3.9$, $SD = 2.2$), and the average amount of distress per conflict ($n = 101$, $M = 4.8$, $SD = 1.8$).

Daily questionnaires. Eight weeks after filling out the integration measures, participants ($n = 113$) completed a single-page questionnaire twice a day for 14 consecutive days (28 observations). Using a 9-point scale, participants rated the extent to which they had experienced each of four positive and five negative moods (Emmons, 1991) in the period under consideration. The positive moods were happy, joyful, enjoyment/fun, and pleased. The negative moods were depressed, unhappy, frustrated, worried/anxious, and angry/hostile. For each of the 28 observations, a positive and a negative affect summary score was computed by summing across the relevant adjectives. Scores for average daily positive mood ($M = 20.3$, $SD = 4.3$) and average daily negative mood ($M = 13.8$, $SD = 4.7$) were then computed by averaging across the 28 observations.

At each observation point, participants also completed a seven-item state vitality scale (Ryan & Frederick, 1994), which was modified from the trait vitality scale used in Study 1. For example, one item was "At this moment, I feel alive and vital." For each observation, a score was created by summing the seven items. An average state vitality score was then formed for each participant by averaging across the 28 observations ($M = 22.8$, $SD = 2.8$).

Finally, at each report, participants checked which of 10 activities they had engaged in since the last report. Seven of these activities were of interest for the present study, and three were fillers. We assumed that the following three activities are relatively growth-oriented and intrinsically meaningful: "talked about my life with someone," "thought about my future," and "helped someone with a problem." On the other hand, the following four activities are more often used to reduce stress or distract one from difficulties: "smoked," "drank an alcoholic beverage," "worked out," and "watched television."³ For each participant, the number of times the three meaningful activities were checked was counted and summed across the 28 observations ($M = 40.3$, $SD = 14.4$). The same procedure was conducted for the four distracting activities ($M = 22.3$, $SD = 12.7$). Principal-components analysis was used to investigate the validity of the a priori distinction between meaningful and distracting activities. The two types of activity were successfully discriminated by a forced two-factor solution, which accounted for 46.4% of the variance: the three meaningful activities all loaded .55 or higher on the first factor, and the four distracting activities all loaded .40 or higher on the second factor.

As a final daily report measure, participants rated, for the period being considered, the extent to which they had acted for each of four reasons. Using a 1 (*not at all*) to 9 (*very much*) scale, participants reported how much their behavior since the last report had been due to extrinsic ("situations forced you to"), introjected ("you made yourself"), identified ("it fit in with your own values"), and intrinsic ("of pure interest") reasons. For each observation, extrinsic and intrinsic scores

were doubled, then the sum of introjected and extrinsic scores was subtracted from the sum of identified and intrinsic scores (the same procedure used to create the striving self-determination variable). These scores were then averaged across the 28 observations to create a daily self-determination variable ($M = 3.3$, $SD = 6.0$).

Results

Further Validation of the Striving Self-Determination Measure

Supporting the stability of the striving self-determination measure, its test-retest reliability over a 10-week period was found to be $r = .67$. Supporting the convergent validity of the striving self-determination measure, it was positively correlated with the daily self-determination variable taken from the daily questionnaires ($r = .47$, $p < .01$). Both of these results suggest that the striving self-determination variable does reflect a trait-like tendency to experience self-determination in one's characteristic goals and behaviors.

Replications of Study 1

Again, there were no sex differences on any of the primary integration measures, so analyses were collapsed across sex. Striving self-determination was again positively correlated with vertical coherence ($r = .31$, $p < .01$) and again more so with intrinsic vertical coherence ($r = .49$, $p < .01$) than extrinsic vertical coherence ($r = .12$, *ns*; $t(112) = 5.56$, $p < .01$). The intrinsic and extrinsic facets of the vertical coherence variable were again strongly correlated with each other ($r = .65$, $p < .01$).

Table 5 presents the correlations of striving self-determination, overall vertical coherence, intrinsic vertical coherence, and extrinsic vertical coherence with the outcome measures repeated from Study 1 and with life satisfaction. Striving self-determination was again positively correlated with autonomy orientation and with self-actualization and was also correlated with life satisfaction. The vertical coherence variable was again significantly correlated with control orientation, again uncorrelated with self-actualization, and was marginally related to life satisfaction. When we examined the two vertical coherence facets separately, intrinsic vertical coherence was significantly positively correlated with autonomy orientation and with self-actualization, as in Study 1; it was also correlated with life satisfaction. Extrinsic vertical coherence was again positively correlated with control orientation and was again nonsignificantly related to autonomy orientation and self-actualization; it was unrelated to life satisfaction. Thus, as in Study 1, the intrinsic facet of the vertical coherence variable was correlated with more positive outcomes than was the extrinsic facet.

³ Drinking alcohol and smoking are generally acknowledged to be unhealthy activities. However, we are not claiming that watching television or working out is necessarily unhealthy. We are also not claiming that distractions cannot have a beneficial role in psychological adjustment. We contrast these four activities against the other three because we assume that they are more likely to be used as mindless escapes from boredom or stress. These assumptions are consistent with Baumeister's (1991) discussion of ways in which people "escape the self."

Table 5
Simple Correlations of Striving Self-Determination, Vertical Coherence, and Intrinsic and Extrinsic Vertical Coherence Variables With Psychological Health Outcomes: Study 2

Psychological health outcomes	Striving self-determination	Vertical coherence	Intrinsic vertical coherence	Extrinsic vertical coherence
Autonomy orientation	.42***	.14	.26***	.01
Control orientation	-.03	.29***	.06	.42***
Self-actualization	.35***	.11	.27***	.04
Life satisfaction	.24**	.16*	.27***	.04

* $p < .10$. ** $p < .05$. *** $p < .01$.

Next, we conducted regression analyses parallel to those of Study 1. Because vertical coherence had been consistently bidimensional, we used the intrinsic and extrinsic facets separately for these analyses. Table 6 reports semipartial correlations resulting when the outcome variables were simultaneously regressed onto striving self-determination, intrinsic vertical coherence, and extrinsic vertical coherence. Striving self-determination made the only significant contribution in predicting autonomy orientation, and intrinsic and extrinsic vertical coherence were significantly related to control orientation, though in opposite directions. All three variables contributed to predicting self-actualization, but only intrinsic vertical coherence was related to life satisfaction. As in Study 1, the amount of variance accounted for in each dependent variable was always significant. In addition, the intrinsic vertical coherence variable again tended to be a stronger predictor of positive outcomes.

Relationships With Role System Integration Measures

Next, we examined the relationships of the integration measures to the three variables derived from the role system diagrams. Table 7 reports these results. Striving self-determination was the only variable significantly correlated with these three role system variables. This pattern was also seen when regression analyses were performed in which all three goal integration

measures were entered as predictors of the role system integration measures.

Prospective Relationships With Daily Reports

As can be seen in Table 8, striving self-determination was significantly positively correlated with average daily vitality and daily positive mood and was negatively correlated with daily negative mood. Intrinsic vertical coherence was significantly positively correlated with both vitality and positive mood, and the extrinsic facet was associated only with greater daily vitality.⁴ Each of the three daily well-being variables was regressed onto intrinsic and extrinsic vertical coherence and striving self-determination (standardized regression coefficients are in Table 8). In these analyses, intrinsic vertical coherence made a significant predictive contribution to both vitality and positive affect; no other variables had significant betas, although the overall amounts of variance accounted for were significant in each equation.

Recall that striving self-determination and intrinsic vertical coherence were predicted to be related to meaningful activity engagement and that extrinsic vertical coherence was predicted to be related to distracting activity engagement. The first hypothesis received partial support, as can be seen in Table 8. Although striving self-determination was unrelated to meaningful activity engagement, intrinsic vertical coherence was significantly positively correlated with this variable. Supporting the second hypothesis, extrinsic vertical coherence was significantly positively correlated with distracting activities; however, it was also correlated with meaningful activity engagement. The pattern became clearer when all three integration measures were simultaneously entered into regression equations as predictors of the two types of activity (see Table 8). In these analyses, intrinsic vertical coherence was significantly positively associated with meaningful activities, whereas extrinsic vertical coherence was not; conversely, the extrinsic facet was positively associated

Table 6
Semipartial Correlations of Striving Self-Determination and Intrinsic and Extrinsic Vertical Coherence With Psychological Health Outcomes: Study 2

Psychological health outcomes	Striving self-determination β	Intrinsic vertical coherence β	Extrinsic vertical coherence β	R^2
Autonomy orientation	.35***	.19	-.17	.20***
Control orientation	.06	-.40***	.67***	.26***
Self-actualization	.22**	.35**	-.30**	.18***
Life satisfaction	.10	.34**	-.19	.11***

Note. Significance of R^2 statistics based on F tests with somewhat varying degrees of freedom.
** $p < .05$. *** $p < .01$.

⁴ As a further validation effort, we correlated the aggregate daily self-determination variable with the three daily well-being measures. Daily self-determination was significantly positively correlated with both positive affect ($r = .57, p < .01$) and vitality ($r = .35, p < .01$) and was significantly negatively correlated with negative affect ($r = -.44, p < .01$). These results conceptually replicate the results involving the striving self-determination variable.

Table 7
Simple and Semipartial Correlations of Goal-Based Integration Measures With Role Integration Measures: Study 2

Role-integration measures	Striving self-determination		Intrinsic vertical coherence		Extrinsic vertical coherence		R^2
	r	β	r	β	r	β	
Positivity of self-roles	.32***	.36***	.12	-.10	.06	.10	.11***
Conflicts among self-roles	-.20**	-.20*	-.08	.00	-.01	.00	.04
Distress from conflicts among self-roles	-.30***	-.34***	-.06	.08	.04	.01	.10**

Note. Significance of R^2 statistics based on F tests with somewhat varying degrees of freedom.
 * $p < .10$. ** $p < .05$. *** $p < .01$.

with distracting activities, but the intrinsic facet was not. Striving self-determination was still unrelated to both of the activity variables.

General Discussion

This article proposes that, to understand personality integration, it is useful to consider both the functional coherence of the elements making up a personality system and the congruence of those elements with inherent organismic needs. Coherence was operationalized by assessing the degree to which people's characteristic strivings help bring about each other (Emmons & King, 1988) and help bring about possible futures (Sheldon & Emmons, in press). Congruence was operationalized by assessing the extent to which people feel that their daily strivings are engaged in for self-determined reasons (Ryan & Connell, 1989) and help to bring about intrinsic possible futures (Kasser & Ryan, 1993, 1994).

Supporting the suggestion that coherence and congruence both reflect a single underlying organizational process, the primary integration measures were positively associated with each other in both studies. The integration measures were, however,

differentially correlated with other measures of psychological health. The degree to which strivings were engaged in for self-determined reasons was positively correlated with nearly every inventory and daily diary measure of well-being and was also related to measures of role system integration. The overall vertical coherence variable was correlated with several positive outcomes. However, when the organismic congruence of the linked-to possible futures was taken into account, this variable was found to be bidimensional. As predicted, the extent to which strivings helped bring about intrinsic futures was correlated with more positive daily and inventory well-being outcomes than was the extent to which strivings helped bring about extrinsic futures. In addition, participants whose strivings helped intrinsic futures were more likely to be autonomously oriented and to engage in meaningful activities, whereas participants whose strivings helped extrinsic futures were more likely to be control oriented and to engage in distracting activities.

Regression analyses examining the additive contributions of the integration measures in predicting outcomes yielded a complex pattern of results. Striving self-determination made the sole contribution to measures of self-esteem and negative affectivity, and the intrinsic vertical coherence variable made larger

Table 8
Simple and Semipartial Correlations of Goal-Based Integration Measures With Daily Outcomes: Study 2

Diary outcomes	Striving self-determination		Intrinsic vertical coherence		Extrinsic vertical coherence		R^2
	r	β	r	β	r	β	
Average daily vitality	.28***	.14	.39***	.26*	.27***	.08	.16***
Average daily positive mood	.25***	.10	.31***	.35**	.10	-.13	.12***
Average daily negative mood	-.24***	-.17	-.15	-.19	.05	.19	.08**
Number of "meaningful" activities	.04	-.17	.34***	.44**	.23**	-.03	.14***
Number of "distracting" activities	.02	-.01	.15	-.02	.25***	.26*	.06*

Note. Significance of R^2 statistics based on F tests with somewhat varying degrees of freedom.
 * $p < .10$. ** $p < .05$. *** $p < .01$.

contributions in the prediction of the other outcome variables. The relative robustness of the intrinsic vertical coherence measure may stem from the fact that it incorporates both the coherence and the congruence aspects of integration. That is, people who score high on this measure have characteristic strivings that are both helpfully connected to desired possible futures and are oriented toward possible futures that satisfy organismic needs. This finding supports the suggestion that both coherence and congruence are important aspects of personality integration. However, our results also suggest that congruence is somewhat more beneficial than is coherence; horizontal coherence and extrinsic vertical coherence (measures of coherence that did not take congruence into account) were weaker predictors of these well-being outcomes than was striving self-determination (a measure of congruence that did not take coherence into account). Clearly more research is needed to untangle the interrelations of these two facets of personality integration.

In sum, these two studies indicate that goal-based measures of personality integration can predict a variety of healthy personality characteristics. The positive outcomes examined in these two studies were assessed with reports of role system integration, diary measures of daily mood and activity, and inventories tapping traitlike constructs. Furthermore, the prospective relationships found in Study 2 are consistent with our assumption that personality integration plays a causal role with regard to psychological health.

We believe that these results raise important questions about the nature of self-regulation. Within contemporary cognitive models of self-regulation, psychological health is thought to result when the person feels able to achieve goals (Bandura, 1977, 1989) or feels that adequate progress is being made toward goals (Carver & Scheier, 1990); consideration is not usually given to what the goals are or why the person strives for them. The results of the current studies indicate that the type of self-regulation studied by cognitive theorists and exemplified by a coherent goal system is not necessarily the same as the type of self-regulation alluded to by humanistic theorists. Our results suggest that for optimal psychological health to occur, behavior must be both effective and consistent with inherent needs and growth tendencies.

The present studies have a number of limitations. First, we considered only participant-generated outcomes, as opposed to more objective measures of functioning and well-being. Second, the goal-based measures did not tap integrative processes directly but merely as they were reflected in assessments of trait integration. Third, the participants in the two samples were rather homogeneous in terms of education, race, and age. Fourth, the measures of vertical coherence have weaknesses. For one, we did not consider the relative importance of the different possible futures to participants. Also, it is unclear to what extent the vertical coherence measure represented active top-down regulatory control of strivings, as opposed to a state of mere consistency between strivings and possible futures. Although both can be considered as forms of systemic coherence, the top-down regulatory model is more consistent with the idea that action systems function via a discrepancy reduction process (Carver & Scheier, 1981; Hyland, 1988; Powers, 1973). Finally, the vertical coherence measure used herein did not assess the lower levels of goal systems—that is, the extent to which a

person has specific behavioral skills and proficiencies and is able to regulate them effectively in accordance with broader goals. Future research could address these issues.

Future research could also be conducted relating these goal-based integration measures to other healthy personality characteristics. For example, because of their strong inner resources, individuals high in integration should be able to tolerate ambiguity and stress, be more effective in various life domains such as their relationships and career (Fitz et al., 1971), and be generally more creative and flexible (Barron, 1968). The social processes that facilitate or hinder the development of coherence and congruence could also be investigated. Developmental environments characterized by warmth and autonomy support should help one to establish a more congruent goal system (Kasser et al., 1994; Ryan, 1993), whereas modeling of goal setting and planning skills (Locke & Latham, 1990) should facilitate the development of coherence within one's goal system. Finally, it would be interesting to explore the relationship of integration to the differentiative aspect of personality complexity, a major area of study in the last 10 years (Dixon & Baumeister, 1991; Donahue et al., 1993; Emmons & King, 1989; Linville, 1985, 1987; Niedenthal, Setterlund, & Wherry, 1992).

Who is an integrated person? Although people are varyingly integrated at different times and in different spheres of their lives, this research suggests the following idealized profile. Integrated people feel that what they are striving to do in their daily lives arises from their own interests and choices, more than from feelings of being controlled by external or introjected compulsions. They believe that their everyday goals and behaviors are helping them move toward futures in which they will continue to grow, develop closer interpersonal relationships, and contribute to their communities, more than toward futures in which they will attain material success, fame, or physical attractiveness. In addition, their strivings help each other more than they hurt each other. Presumably because of their integrated goal systems, they feel vital, satisfied with their lives, have a strong sense of self-esteem, are open to both their own experiences and the experiences of others, are relatively self-actualized, and experience more positive and fewer negative moods. They also feel positive about their different life roles and feel that they do not conflict with each other. Finally, they are more likely to engage in meaningful activities such as helping others or pondering their future, and are less likely to engage in distracting activities such as drinking alcohol or watching television.

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