Facilitating Internalization: The Self-Determination Theory Perspective

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ABSTRACT Self-determination theory (Deci & Ryan, 1985) posits that (*a*) people are inherently motivated to internalize the regulation of uninteresting though important activities; (*b*) there are two different processes through which such internalization can occur, resulting in qualitatively different styles of self-regulation; and (*c*) the social context influences which internalization process and regulatory style occur. The two types of internalization are *introjection*, which entails taking in a value or regulatory process but not accepting it as one's own, and *integration*, through which the regulation is assimilated with one's core sense of self. Introjection results in internally controlling regulation, whereas integration results in self-determination. An experiment supported our hypothesis that three facilitating contextual factors—namely, providing a meaningful rationale, acknowledging the behaver's feelings, and conveying choice—promote internalization, as evidenced by the subsequent self-regulation of behavior. This experiment also supported our expectation that when the social context supports self-determination, integration tends to occur, whereas when the context does not support self-determination, introjection tends to occur.

An experiment supported our hypothesis that three facilitating contextual factors-namely, providing a meaningful rationale, acknowledging the behaver's feelings, and conveying choice-promote internalization, as evidenced by the subsequent self-regulation of behavior.

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Throughout life, people face the challenge of developing self-regulation of activities that are useful for effective functioning in the social world but are not inherently interesting and thus not intrinsically motivated. For many people, the activities of learning the multiplication tables or organizing their personal papers are important but are not intrinsically interesting, so that developing a willingness to do such activities would be of considerable value. The challenge of developing such self-regulation is perhaps most acute for children, though it is relevant at all developmental periods.

This basic issue has been addressed by many psychologists, often under the rubric of internalization (e.g., Kelman, 1961; Schafer, 1968). In the present article, we outline the self-determination theory of internalization and behavioral regulation and present an experimental test of the theory.

Self-determination theory (Deci & Ryan, 1985, 1991) is an organismic-dialectical theory that views human beings as proactive organisms whose natural or intrinsic functioning can be either facilitated or impeded by the social context. Like other organismic theories (e.g., Hartmann & Loewenstein, 1962; Schafer, 1968), the self-determination approach (Deci & Ryan, 1991; Ryan, 1993) views internalization as the process of transforming external regulations into internal regulations and, when the process functions optimally, integrating those regulations into one's sense of self. This organismic process stands in dialectic relationship to the social context, so the context is theorized to influence both the amount and quality of internalization.

Self-determination theory uses the concepts of *introjection* and *integration* to describe two different types of internalization that result in different qualities of regulation. Introjection refers to partial or suboptimal internalization resulting in internally controlling regulation, and integration refers to optimal internalization resulting in self-determined behavior.

Introjection and Internally Controlling Regulation

The term introjection, which has a long history of use within the psychoanalytic tradition, refers to a person's taking in a parental representation (Freud, 1924) that, according to Meissner (1981), becomes a structural component of the psychic system. The person then complies with the demands of this representation so as to gain imagined approval and thus to feel secure.

Perls's (1973) usage, within the Gestalt approach, is rather different and pertains to a particular regulation or value (rather than to a general object representation). He defined introjects in simple, graphic terms as aspects of the environment that people "swallow whole and do not digest" (p. 32) and that influence subsequent behavior. Our definition is close to that of Perls.

For us, introjection refers to internalization in which the person "takes in" a value or regulatory process but does not identify with and accept it as his or her own. Instead, it becomes an inner control—a rule for action that is enforced by sanctions such as threats of guilt or promises of self-approval. In a metaphorical sense, when a regulation is merely introjected, it is as if the regulatory process and the person being regulated were still separate even though both are "within the same skin." Regulatory processes that have been introjected underlie what Ryan (1982) referred to as internally controlling regulation, a style that is characterized by a pressured demanding of oneself.

Considerable evidence indicates that internally controlling regulation, like regulation by external controls, is accompanied by pressure, tension, and anxiety (e.g., Ryan & Connell, 1989). The type of ego involvement in which one's "worth" is on the line—in which one's self-esteem is contingent upon an outcome (e.g., Nicholls, 1984; Ryan, 1982)—is an example of internally controlling regulation that results from introjection. One is behaving because one feels one has to and not because one wants to, and this regulation is accompanied by the experience of pressure and tension.

Integration and Self-Determination

Integration, in contrast, refers to internalization in which the person identifies with the value of an activity and accepts full responsibility for doing it. The regulatory process is said to be integrated with one's self (Deci & Ryan, 1991), so the regulator and regulatee are not separate, even in the metaphorical sense. As such, one's behavior emanates from one's self; it is self-determined. One does the behavior wholly volitionally because of its utility or importance for one's personal goals. With integrated regulation, the person would not experience the conflict and tension associated with introjection, and research indicates that there

will be greater consistency or coherence between the person's behavior and internal states (Koestner, Bernieri, & Zuckerman, 1992).

Empirical Evidence

Recent research has helped clarify the differences between internally controlling (i.e., introjected) and self-determined (i.e., integrated) forms of regulation. For example, Ryan (1982) conducted an experiment in which some subjects were induced to become ego-involved in an activity, and others were induced to be task-involved. Subjects in the ego-involved condition were expected to pressure themselves to do well at the activity, relative to those in the task-involved condition. Results showed that those subjects in the ego-involvement (i.e., internally controlling) condition reported greater pressure and tension and displayed less subsequent intrinsic motivation than subjects in the task-involvement condition. This suggests that internally controlling regulation does not represent self-determination but is antagonistic to it, for the internally controlling regulation undermined intrinsic motivation (which is the prototype of self-determination). Other studies (e.g., R. Koestner, Zuckerman, & J. Koestner, 1987; Plant & Ryan, 1985; Ryan, Koestner, & Deci, 1991) have replicated and extended these findings.

In a second line of research, Ryan and Connell (1989) suggested that children do schoolwork for varied reasons, including "that they think they should and will feel guilty if they don't," which conveys a sense of pressure or demand and results from introjection; and "that they think the material is important for them to know," which conveys a sense of personal endorsement and indicates greater integration. These researchers reported that although both types of regulation were positively correlated with the children's self-ratings of trying hard and with their parents' ratings of their being motivated, the two styles of internalized regulation had other, quite different correlates. The introjected style was strongly associated with school anxiety and maladaptive coping with failure, whereas the more self-determined style was associated with school enjoyment and proactive coping. Grolnick and Ryan (1989) reported that the more self-determined style was predictive of conceptual understanding, whereas introjection was not.[1]

1. A complementary study by Blais, Sabourin, Boucher, and Vallerand (1990) in the domain of personal relationships showed that introjected reasons for being in a marital relationship were negatively associated with dyadic adjustment and marital satisfaction, whereas integrated reasons were positively associated with these quality-of-relationship variables.

To summarize, these studies support that there are two quite different types of internalized regulatory processes (i.e., internally controlling and self-determined) that have different correlates and outcomes, even though both are strong motivators of behavior and do not require external contingencies.

The Motivational Basis of Internalization

Because self-determination theory suggests that internalization (in general) and integration (in particular) are natural, intrinsically motivated tendencies, contextual support for self-determination should facilitate these processes. Thus, support for self-determination is theorized to predict the amount of internalization and also to distinguish between a regulation's being integrated versus merely introjected. If internalization occurs in the presence of support for self-determination, it is hypothesized to be greater in amount and to be integrated, whereas if it occurs in the absence of support for self-determination, it is hypothesized to be less and to be introjected.

Recent research on social contexts and internalization (Grolnick & Ryan, 1989) has demonstrated that an interpersonal factor, referred to as *autonomy support*, is important for promoting internalization and self-determination. Mothers and fathers of late elementary students were interviewed separately about their parenting styles. Two interviewers rated each parent on several dimensions, including autonomy support, which was defined as parents' appearing to value self-initiation and employ techniques that encourage their children's choice, independent problem solving, and participation in decision making, rather than appearing to value control and employ power-assertive techniques that pressure children toward compliance. Ratings of parental autonomy support were found to positively predict the children's self-determined forms of regulation in the academic domain and also their school performance. The present work is related to Grolnick and Ryan's and aims to specify manipulable contextual events that promote self-determination by fostering integrated internalization.

Facilitating Integration

The concept of integrated internalization entails accepting a regulatory process as one's own. We suggest three contextual events that will allow this acceptance and thus promote integrated internalization. They are: (*a*) providing a meaningful rationale, (*b*) acknowledging the behaver's perspective, and (*c*) conveying choice rather than control.

Because internalization is a proactive process, a *rationale* that is personally meaningful to the target person can aid him or her in understanding why self-regulation of the activity would have personal utility. If, for example, a boy dislikes picking up his room, a meaningful rationale for doing it might be "so that his toys won't get lost or stepped on and broken."

The request to do an activity that is not intrinsically motivated, even when a meaningful rationale is provided, can create an internal conflict with the person's inclinations, thus resulting in the person's feeling pressure and tension. An *acknowledgment* of the apparent conflict between the request and the inclinations conveys respect for the person's inclinations and right to choose. Thus, it can help alleviate the tension and allow the person to understand that the requested behavior can harmoniously coexist with his or her inclinations. The regulation could then be integrated. In the above example, the comment, "I know that it's not fun for you to spend time picking up your room," would convey that the boy's feelings are legitimate and not necessarily inconsistent with doing the activity.

A study by Koestner, Ryan, Bernieri, and Holt (1984) supports the contention that acknowledging conflicting feelings helps facilitate self-determination. In this study, 6- and 7-year-old children worked on an interesting painting activity and limits were set regarding the children's being neat. Acknowledging their feelings (of not wanting to be so neat) helped the children maintain intrinsic motivation for painting in spite of the limits.

The third social-contextual factor that is theorized to support self-determination and thus to facilitate integrated internalization concerns the way in which the rationale and acknowledgment are presented. Specifically, the issue is whether they are presented in a controlling and pressuring way or in a way that *minimizes pressure and conveys choice*. If the requesting vocalization employs "shoulds," "musts," and "have to's," for example, the functional significance of the communication will be controlling, and both internalization and integration

will be impaired. If, however, it does not pressure, but instead allows the person to feel choice about doing the activity, the communication is likely to convey autonomy support and thus facilitate internalization and integration. Studies by Ryan (1982) and Ryan, Mims, and Koestner (1983) have demonstrated that pressuring locution decreases intrinsic motivation (thus suggesting that it undermines the feeling of self-determination) relative to locution that was noncontrolling and conveyed a sense of choice. Studies using the cognitive dissonance (e.g., Festinger, 1957) and self-attribution (e.g., Lepper, 1983) perspectives have also supported the view that choice and minimal external control promote internalization (e.g., Freedman, 1965).

To summarize, we hypothesize that the combination of a meaningful rationale, an acknowledgment of conflicting feelings, and a style that minimizes pressure and conveys choice are the three critical, social-contextual facilitating factors that support self-determination. The absence of these factors represents nonsupport for self-determination. Consequently, these factors are hypothesized to predict the amount of internalization of an external regulation and, in particular, to distinguish between introjected and integrated internalization. When internalization occurs in contexts that support self-determination (i.e., with three or two facilitating factors present), the regulations will be integrated, as evidenced by coherence or consistency between one's behavior and one's feelings about the activity. However, when internalization occurs in contexts that do not support self-determination (i.e., with one or no facilitating factors present), the regulations will merely be introjected, as evidenced by a lack of consistency between one's behavior and one's feelings about the activity.[2]

METHOD

Overview

This experiment employed a 2 × 2 × 2 factorial design in which each of the three hypothesized facilitating factors was manipulated as an independent variable. Rationale/no rationale, acknowledgment/no acknowledgment, and

2. We made the split between three and two versus one and zero facilitating factors as representing support versus nonsupport for self-determination to create two types of contexts (one predicted to promote integration and one predicted to promote introjection) that would have an equal number of subjects in each. The data shown in Table 5, as will be discussed later, indicate that this procedure was appropriate.

low versus high controllingness were crossed, so that the eight resulting factorial groups of subjects could be compared after they engaged in a boring computer-assisted tracking task. This allowed us to test for main effects of the three independent variables, although we had not hypothesized main effects, and it allowed us to collapse cells into conditions (namely, three, two, one, or zero facilitating factors) to test the hypotheses that the amount and type of internalization would be a function of the number of facilitating factors. Subsequent to performing the task, subjects were left alone so they could return to the target task or do alternative activities. The amount of time they spent on the target task was used as a measure of the amount of internalization that had occurred.

The affective experiences that accompany behavioral self-regulation were also of interest, so a questionnaire was used to assess subjects' experience of choice, perception that the activity was useful, and feeling of interest/enjoyment. These self-report variables were used in two ways. First, they were employed as manipulation checks. We expected that perceived usefulness would be affected primarily by rationale and that perceived choice would be affected by low controllingness and by acknowledgment of feelings. We had no prediction about interest/enjoyment, although Sansone, Weir, Harpster, and Morgan (1992) suggested that having a good rationale for doing a nonintrinsically motivated task may lead subjects to find strategies for making it more interesting.

Second, we used the affective variables to distinguish integrated from introjected internalizations. Introjection is the internalization process that results in conflict or tension between one's behavior and inclinations, whereas integration is the internalization process that results in harmony or coherence between one's behavior and inclinations. Accordingly, negative correlations between the amount of self-regulated behavior and the positively toned affective variables would indicate that the regulation was introjected, whereas positive correlations would indicate that the regulation was integrated.

Subjects

There were eight cells in this factorial experiment: One cell had three facilitating factors; three cells had two out of the three; three cells had only one of the three; and one cell had no facilitating factors. One hundred and ninety-two introductory psychology students participated in the study to fulfill a course requirement. Sixteen subjects (8 males and 8 females) were randomly assigned to each of the six experimental cells in which either two facilitating factors or one facilitating factor was present. Forty-eight subjects (24 males and 24 females) were randomly assigned to each of the two cells with three or zero facilitating factors. This cell distribution was used so that, when the cells were collapsed into "conditions" defined by number of facilitating factors (i.e., three, two, one, or zero), there would be 48 subjects (24 males and 24 females) in each of the resulting four conditions.

Procedure

Subjects were run individually by a same-sex experimenter. Upon arriving, subjects were seated on one side of the laboratory room where there was a chair and a small table with several magazines placed casually on it. The experimenter explained that the subjects would be participating in a study of "perceptual activity" that involved performing several trials of a task and then answering a questionnaire about their experience.

Subjects then moved to the other side of the room where they sat at a microcomputer. The target activity involved working on an Apple IIe that had been programmed to present small dots of light, at random intervals, one at a time, at random spots on the screen. Subjects were to watch the screen and, as soon as they saw the light, press the space bar to make the light disappear. It would then reappear after a few seconds. This sequence was repeated over several trials, and the time between trials varied randomly from 2 to 8 seconds.

Pilot testing indicated that subjects found this activity to be quite boring. At the same time, however, because it involves focused attention, it easily lent itself to the believable rationale that it could be useful for improving concentration.

After a subject received instructions, the computer program allowed him or her 60 seconds to practice. Following the practice trials and prior to the actual trials, the experimental manipulations were done orally by the experimenter, who continued speaking to the subject seated at the computer. The *rationale* for this activity was:

> Doing this activity has been shown to be useful. We have found that those subjects who have done it have learned about their own concentration. This has occurred because the activity involves focused attention which is important in concentration. For example, this is the type of task that air traffic controllers use in order to enhance their signal detection abilities.

The *acknowledgment* of subjects' possible disinterest in the task was done with the following statement:

> I know that doing this is not much fun; in fact many subjects have told me that it's pretty boring. So I can perfectly understand and accept that you might not find it very interesting.

The low versus high *controllingness* was manipulated by the locution used in the inductions. In the course of the instructions, there were 10 places where the wording was changed slightly to constitute the low versus high controllingness manipulation. In the low controllingness condition neutral language was

used and choice was mentioned, whereas in the high controllingness condition words like "should," "must," and "have to" were used. Some examples are "It involves attending" (vs. "You must attend"); "Now you can press" (vs. "Now you should press"); and "If you are willing to continue, all you need to do is start the activity by pressing the space bar" (vs. "You should start the activity by pressing the space bar").

The actual trials period lasted for 5 minutes. While the subject performed the task, the experimenter was across the room reading a magazine and waiting for the subject to indicate that the trials had ended. Following the experimental trials and before the dependent measures were taken, all subjects were told that they had done well on the activity so that they would have a sense of perceived competence. After all dependent measures had been taken, subjects were debriefed and thanked.

Dependent Measures

This study was concerned both with the amount of internalization and the type of internalization. The amount of internalization was measured by subsequent behavioral self-regulation, and the type of internalization was determined by the correlations between the subsequent behaviors and the subjects' affective self-reports.

To obtain the behavioral measure of internalization, subjects were left alone for 5 minutes following their performance of the target activity. Subjects were told that their only remaining task was to complete a questionnaire. The experimenter said he/she would get a copy of it from the other office and be back in just a few minutes. (This was included to provide a reason to leave the subject alone in the room for the free activity period.) Then the experimenter added very casually: "By the way, if you would like to do more of the activity, you're welcome to. All you have to do is press the space bar to activate the program, and press the X key to terminate it." Thus, when the experimenter left the room for a period of 300 seconds, the subject could either return to the task or do other things, such as read magazines. If the subject worked with the activity at all during that free activity period, the computer recorded the number of seconds the subject spent on the task. This length of time, which constituted the dependent measure of internalization, is referred to as *engagement time*.

The engagement-time measure of internalization is the same as the free-choice measure of intrinsic motivation that has been used in various past studies (e.g., Deci, 1972). However, much recent work has indicated that there are various types of *internal* motivation, only one of which is intrinsic motivation, and free-choice-period persistence could be a function of any of these. Thus, this engagement (or persistence) measure has more recently been considered a general measure of internal motivation or self-regulation (e.g., Anderson & Rodin, 1989; Ryan et al., 1991). Specification of the type of internal motivation that it represents in any experiment requires some additional empirical evidence. In the present study, intrinsic motivation is not relevant because the activity was found to be quite boring in pilot work, so it is not one that people would do primarily out of interest in the activity itself. Therefore, if subjects subsequently perform the activity, it is theorized to be because they have internalized the regulation of it. Because the internalized motivation could be either introjected or integrated, we will distinguish between them by correlations between behavioral and self-report variables.

In this experiment, subjects completed a 25-item questionnaire after the free activity period, and responses were given on 6-point Likert-type scales. A principal components factor analysis with varimax rotation yielded an 8-item factor for perceived choice (e.g., "I believe I had some choice about doing this activity"), a 9-item factor for perceived usefulness (e.g., "I believe that doing this activity could be of some value to me"), and an 8-item factor for interest/enjoyment (e.g., "I enjoyed doing this activity very much"). All factor loadings were greater than .6. Three dependent variables were thus formed from the 25 items. Positive correlations between these self-report variables and behavioral self-regulation would indicate internal coherence, so significant positive correlations were used as the indicator of integration. In contrast, zero or negative correlations would indicate lack of coherence, so they were used as an indicator of introjection.

RESULTS

Values on the dependent measure of behavioral self-regulation during the free activity period were not normally distributed because many subjects had values of 0 seconds. Thus, we used both a linear and a log linear model to test our hypotheses. The results of the two sets of analyses were virtually identical, with the same significant results appearing for each set. Thus, we present only results for the linear model because that allowed for one crucial regression analysis (using only subjects with scores greater than 0) that the log linear model did not.

The mean seconds of free activity engagement for subjects in each condition (along with standard deviations) appear in Table 1, along with the number of subjects who engaged in the activity at all during that period. Engagement-time scores were submitted to a $2 \times 2 \times 2 \times 2$ analysis of variance (ANOVA), with the three facilitating factors being the first three independent variables and gender being the fourth. No main effect or interaction appeared for gender, so it was not included in subsequent analyses.

A three-way ANOVA, collapsed across gender, was then performed. No significant main effects and no significant interactions emerged,

Table 1
Means and Standard Deviations for Seconds of Engagement Time with the Target Task during the Free Activity Period in Each Experimental Condition

	Low control	High control
Rationale		
Acknowledgment	85.0 (120.7) n = 21/48	46.0 (80.0) n = 6/16
No acknowledgment	73.9 (127.5) n = 6/16	22.2 (62.1) n = 3/16
No rationale		
Acknowledgment	81.0 (127.4) n = 7/16	23.3 (74.6) n = 3/16
No acknowledgment	7.3 (29.2) n = 1/16	54.6 (106.1) n = 12/48

Note. Standard deviations are given in parentheses. The n in each cell refers to the number of people, out of the total number in that cell, who spent any time working with the task in the free activity period.

although the marginals were all in the expected directions: controllingness, low = 69.5 and high = 42.5; rationale, present = 66.2 and absent = 45.9; and acknowledgment, present = 67.6 and absent = 44.5. These results indicate that although each of the three facilitating factors seems to affect internalization in the expected direction, none of them made a significant independent contribution to internalization.

Our first hypothesis was that the engagement-time measure of internalization would be a function of the number of facilitating factors. To test this, we collapsed the three cells with two facilitating factors into a two-facilitating-factor condition, and the three cells with one facilitating factor into a one-facilitating-factor condition. As noted, this created four conditions, defined by number of facilitating factors, each with 48 subjects. The means and standard deviations for these four conditions appear in Table 2.

These data were subjected to a four-level, one-way ANOVA, and a

Table 2
Means and Standard Deviations for Free Activity Engagement Time, Perceived Choice, Perceived Usefulness, and Interest/Enjoyment, as a Function of Number of Facilitating Factors

	Three facilitating factors	Two facilitating factors	One facilitating factor	No facilitating factors	One-way ANOVAs
Engagement time	85.0 (120.7)	66.9 (112.5)	17.6 (57.8)	54.6 (106.1)	F = 3.73 p = .01
Perceived choice	5.00 (0.69)	4.58 (0.96)	4.12 (0.91)	4.12 (1.09)	F = 10.13 p = .001
Usefulness	3.66 (1.08)	3.12 (1.17)	2.99 (1.08)	2.82 (0.97)	F = 5.46 p = .001
Interest/enjoyment	2.65 (1.01)	2.38 (1.20)	2.27 (0.89)	2.21 (0.86)	F = 1.89 p = .14

Note. n = 48 per condition. Standard deviations are given in parentheses. Also shown are values for F and p for each one-way analysis of variance (ANOVA).

significant effect emerged, $F(3, 188) = 3.73, p < .01$. A linear contrast was then performed to test whether engagement time was a linear function of number of facilitating factors, and the linear contrast was significant, $F(1, 188) = 4.55, p < .03$. Inspecting the table, however, one notes that the mean for zero facilitating factors was higher than the mean for one facilitating factor, so we then performed a curvilinear contrast. This yielded an $F(1, 188)$ of 3.48, which was marginally significant ($p < .07$).

The fact of the zero-factor condition's being higher than the one-factor condition is counter to our hypothesis. It is possible that this outcome is merely a chance occurrence, though it may be a replicable finding. We will address the possible theoretical implications of the finding in the Discussion section.

Self-Report Measures

Scores on the affect variables were formed for each subject by averaging item scores within the three factors: perceived choice, perceived usefulness, and interest/enjoyment. These composite scores were highly significantly intercorrelated: perceived choice and usefulness, $r = .32$, $p < .0001$; perceived choice and interest/enjoyment, $r = .27$, $p < .001$; and usefulness and interest/enjoyment, $r = .73$, $p < .0001$.

The means and standard deviations for these composites, by cell, appear in Table 3. A three-way multivariate analysis of variance (MANOVA) was performed using the three affective composites as dependent variables. Main effects emerged for controllingness, $F(3, 186) = 14.7, p < .001$, and for rationale, $F(3, 186) = 9.6, p < .001$, both in the expected directions. A three-way ANOVA was then performed on each dependent variable composite. As predicted, there was a main effect on perceived choice for low versus high controllingness, $F(1, 184) = 39.5, p < .0001$, and for acknowledgment, $F(1, 184) = 6.3, p < .02$. The predicted main effect for rationale on perceived usefulness was also significant, $F(1, 184) = 28.7, p < .0001$. Further, two unpredicted effects emerged: an interaction between controllingness and acknowledgment on perceived usefulness, $F(1, 184) = 4.5, p < .05$ (with low controllingness and acknowledgment, collapsed across rationale, leading to a very high level of perceived usefulness); and a main effect for rationale on interest/enjoyment, $F(1, 184) = 11.9, p < .001$.

The main effects for controllingness and acknowledgment of feelings on perceived choice, and for rationale on perceived usefulness, indicate

Table 3
Means and Standard Deviations for the Self-Reports of Perceived Choice, Perceived Usefulness, and Interest/Enjoyment in the Eight Cells, along with Cell Sizes

		Low control	High control
Rationale			
Acknowledgment	Choice	5.01	3.91
		(0.69)	(0.96)
	Usefulness	3.66	3.12
		(1.08)	(1.11)
	Interest/enjoyment	2.65	2.12
		(1.01)	(0.86)
	n	48	16
No acknowledgment	Choice	4.97	3.85
		(0.98)	(1.04)
	Usefulness	3.49	3.81
		(1.23)	(0.79)
	Interest/enjoyment	2.88	2.71
		(1.42)	(0.92)
	n	16	16
No rationale			
Acknowledgment	Choice	4.86	3.91
		(0.54)	(0.77)
	Usefulness	2.76	2.72
		(1.13)	(0.84)
	Interest/enjoyment	2.93	2.13
		(1.15)	(0.67)
	n	16	16
No acknowledgment	Choice	4.59	4.12
		(0.75)	(1.09)
	Usefulness	2.45	2.82
		(1.11)	(0.97)
	Interest/enjoyment	1.96	2.21
		(0.92)	(0.86)
	n	16	48

Note. Standard deviations are given in parentheses.

that the manipulations were effective. The unpredicted interaction of controllingness and acknowledgment on perceived usefulness suggests that if people do not feel controlled and if their own perspective is validated, they will discover for themselves the activity's usefulness and importance. Finally, two explanations for the unpredicted main effect of rationale on interest/enjoyment seem plausible. The statement about air traffic controllers in the rationale may have made the task seem more interesting to subjects. Alternatively, having a meaningful rationale may have led subjects to search for or create interesting aspects of the task (Sansone et al., 1992).

The self-report data were then collapsed into conditions representing number of facilitating factors. Table 2 shows the means and standard deviations for each of the three self-report variables in each of these four conditions. First, a four-level, one-way ANOVA was performed on each. The main effect was significant for both perceived choice, $F(3, 188) = 10.13$, $p < .001$, and perceived usefulness, $F(3, 188) = 5.46$, $p < .001$, though not for interest/enjoyment. A linear contrast was then performed on each of the two variables for which a significant main effect emerged and both contrasts were also significant: perceived choice, $F(1, 188) = 27.08$, $p < .001$; and perceived usefulness, $F(1, 188) = 14.57$, $p < .001$.

As a final test of the prediction that the amount of internalization would depend on support (vs. nonsupport) for self-determination (and thus on subjects' experience), we performed multiple regression analyses predicting engagement time from both context and experiential (i.e., affect) variables. Treatment was dummy-coded with three and two facilitating factors (which constitute support for self-determination) assigned a code of 1 and with one or zero facilitating factors (which constitute nonsupport) assigned a code of 0. In the hierarchical regression, the dummy code for treatment was added first, then the three self-report variables were added as a block. The blocking was done because these variables were significantly intercorrelated and all had a similar pattern of means across the four conditions. Finally, the block of interactions between the dummy-coded treatment variable and the three self-report variables was added to the regression equation.

The results of the analysis appear in Table 4. As shown, there was a significant effect for treatment: $\Delta R^2 = .037$, $F(1, 190) = 7.23$, $p < .01$. Further, it yielded a significant effect for the block of affective self-reports: $\Delta R^2 = .082$, $F(3, 187) = 5.82$, $p < .01$. The block interaction between treatment and self-report variables did not account for

Table 4
Results of the Hierarchical Regression Analyses, Predicting Engagement Time from Treatment, the Block of Three Self-Report Variables, and the Block of Interactions between Treatment and the Self-Report Variables

	df	ΔR^2	*F*	*p*
All subjects				
Treatment	(1, 190)	.037	7.23	.01
Self-reports	(3, 187)	.082	5.82	.01
Interaction	(3, 184)	.023	1.61	*ns*
Subjects who displayed internalization				
Treatment	(1, 57)	.000	0.00	*ns*
Self-reports	(3, 54)	.114	2.32	*ns*
Interaction	(3, 51)	.222	5.70	.01

Note. The first set is for all subjects ($n = 192$) and the second set is for only those subjects with engagement time scores greater than zero ($n = 59$).

a significant amount of variance. To summarize, both the treatment (when dummy-coded for support vs. nonsupport for self-determination) and the block of three affective self-reports accounted for significant amounts of variance in engagement time. Because treatment was experimentally manipulated, we can conclude causality from its effect; however, the direction of causality between internalization and affective experience is unclear.

The second hypothesis of this study was that the process of integration, as evidenced by consistency between self-regulated behavior and affective states, would occur in contexts that support self-determination, whereas introjection, as evidenced by lack of consistency between behavioral self-regulation and affective states, would occur in contexts that do not support self-determination.

To explore the type of internalization that had occurred, we considered only those subjects who displayed some internalization (i.e., only subjects with engagement times greater than zero). The reason for doing this is as follows. Our theory allows for two types of internalization: a primary process of integration that occurs when one feels self-determined, and a secondary process of introjection that can occur when one feels pressured. One's failure to internalize in conditions nonsupportive of self-determination could therefore result either from not feeling self-determined enough to integrate the regulation or

from not feeling pressured enough to introject it. Thus, the people who failed to internalize the regulation (particularly in the nonsupportive conditions) are not relevant for testing the hypothesis about the type of internalization that *did* occur.

To test the hypothesis about types of internalization, we first performed a hierarchical multiple regression in which engagement time was regressed onto (*a*) the dummy-coded experimental treatment; (*b*) the block of affective self-reports; and (*c*) the block of interactions between treatment and self-reports. This is the same equation used in the previous analysis; however, here only those subjects who had engagement times greater than zero were used. A significant interaction would support the hypothesis.

The second set of results in Table 4 refers to this analysis based on 59 subjects, 40 who had displayed self-regulation in the conditions that support self-determination and 19 who had displayed self-regulation in the conditions that do not. This analysis revealed that the interaction between the treatment and the self-report variables, rather than the main effects, was significant: $\Delta R^2 = .222, F = 5.70, p < .01$. In other words, when engagement time was predicted only for those subjects with nonzero engagement times, the affective self-report variables differentially predicted engagement time depending on whether the treatment condition did or did not support self-determination. (The disappearance of the main effect for treatment suggests that the effect had been more a function of the number of people who displayed internalization under the different conditions than the amount of internalization that each of those persons displayed.)

To clarify the interaction finding, we computed zero-order correlations between engagement time and each of the affective variables under conditions that support self-determination and under conditions that do not. The results appear in Table 5.

In conditions that support self-determination, the three correlations were all highly significant, ranging from +.44 to +.55. By contrast, in conditions that do not support self-determination, the three correlations were almost as strongly negative as the other three were positive. These ranged from −.36 to −.44. However, because there were only 19 subjects in this analysis, these correlations did not reach significance. Two were marginally significant at $p = .10$ and the third just missed that level. Finally, tests of the differences between correlations for each of the three self-report variables in the support versus nonsupport for self-determination conditions were all significant: perceived choice, $z = 2.96$, $p < .01$; perceived usefulness, $z = 2.96$, $p < .01$; and interest/enjoyment, $z = 3.65$, $p < .001$.

Table 5
Correlation Coefficients between Free-Choice Engagement Time and Each of the Self-Report Variables within the Conditions That Support Self-Determination and the Conditions That Do Not Support Self-Determination

	Conditions supporting self-determination ($n = 40$)	Conditions not supporting self-determination ($n = 19$)
Choice	.47*	−.36
Usefulness	.44*	−.39+
Interest/enjoyment	.55*	−.44+

+$p < .10$
*$p < .01$.

The positive correlations in the support for self-determination conditions indicate integration of the behavioral regulations, i.e., people engaged in the behavior feeling a sense of choice, believing the task useful, and experiencing some interest or enjoyment for the task. Further, although one must be cautious in interpretation, the correlations in the nonsupport conditions suggest that these subjects engaged in the activity *in spite of* not feeling free, not believing the task was particularly useful, and not finding it interesting or enjoyable. At the very least, the behavior and self-report measures were unrelated in these conditions, so it is clear that subjects did *not* do the activity because of perceiving choice, usefulness, and interest/enjoyment. These subjects apparently did the activity because they thought they should; they introjected the regulation and were internally controlling in doing the task.

DISCUSSION

Self-determination theory assumes that people are inherently motivated to take on and integrate the regulation of activities that are useful for effectively negotiating the social milieu. Social contexts that allow people to satisfy the innate psychological need for self-determination while engaging in an uninteresting behavior are predicted to promote the internalization and integration of that behavioral regulation.

This research had three goals: (*a*) to specify contextual factors that support self-determination; (*b*) to show that the amount of internalization (and thus subsequent self-regulation) will be greater under conditions that support self-determination, here operationalized by the number of facilitating factors; and (*c*) to link integrated internalization to contexts that support self-determination and introjected internalization to contexts that do not support self-determination.

The results indicate that providing a rationale, acknowledging feelings, and conveying choice are relevant for promoting internalization. Thus, when the social context supported self-determination (as represented by three or two of these facilitating factors being present), there was more internalization than when the context did not support self-determination (as represented by one or zero facilitating factors). Whether the amount of internalization is a linear function of number of facilitating factors is less clear, however. It is possible that highly nonsupportive contexts (e.g., zero facilitating factors) lead to more introjection than do moderately nonsupportive contexts (e.g., one facilitating factor). That would mean that if the process of introjection (rather than integration) "kicks in" when the context tends to be nonsupportive, then the less supportive the context gets, the more introjection is likely to occur. Such a phenomenon seems plausible and is reconcilable with our theory, but further work is required to determine if this is a replicable finding.

Perhaps the most important finding in the present research was that the type of internalization—namely, integration versus introjection—appears to have been dichotomously dependent on whether the context tended to be supportive or nonsupportive of self-determination. Contexts that were supportive of self-determination promoted integration (as represented by positive correlations between behavior and self-reports), whereas those that were nonsupportive of self-determination promoted introjection (as represented by negative correlations).

These results are consistent with a kind of threshold (rather than incremental) model of promoting integration, and they provide an explanation for the lack of significant main effects in the factorial analysis. Integration seems to require a general ambience of support for self-determination, whereas introjection results when there is a general ambience of nonsupport. The facilitating factors seem to have worked synergistically, such that the presence of at least two of the three factors created a context sufficiently supportive of self-determination to promote integration, whereas the absence of at least two created a context that promoted only introjection. Accordingly, no single facilitating factor had strong enough effects to explain a significant amount of variance.

CONCLUSION

Self-determination theory (Deci & Ryan, 1985) distinguishes two general classes of motivated behaviors: those that are self-determined, i.e., governed by the process of choice and experienced as emanating from the self; and those that are controlled, i.e., governed by the process of compliance and experienced as compelled by some interpersonal or intrapsychic force. The theory further suggests that there is a vital, inherently motivated developmental process—referred to as organismic integration—through which people elaborate and refine regulatory processes that allow them to be self-determined rather than controlled.

The natural organismic integration process is theorized to interact with the social context. Thus, when the social context provides needed nutriments such as support for self-determination, the integration process will function optimally, whereas when the social context fails to provide the needed support for self-determination, the organismic process will not function optimally and introjection will result.

Our study showed that specific contextual supports that promote internalization and integration include a meaningful rationale, acknowledgment of feelings, and low controllingness. The ambience created by the presence of three or two of these facilitating factors led to more internalization than the ambience created by one or zero facilitating factors. Further, when there were at least two facilitating factors, the internalization that occurred was more likely to be integrated, whereas when there was at most one facilitating factor, the internalization that occurred was more likely to be introjected.

The present study showed that the same manifest behavior, resulting from internalization, can be regulated quite differently (as evidenced by the positive vs. negative correlations between the behavior and the positive affect variables). This study also provides a means of reconciling our result that supporting self-determination promotes greater internalization with the findings by behaviorists that controlling contexts promote internalization. Controlling contexts can promote internalization, but there will be on average less internalization than in the self-

determination-supporting contexts and the internalization that occurs is likely to be more conflicted (i.e., introjected).

A substantial amount of research done in the past 15 years has provided both direct and indirect evidence that self-determined regulation is associated with more positive attributes than controlling regulation. For example, self-determination has been linked to greater creativity (Amabile, 1983), more cognitive flexibility (McGraw & McCullers, 1979), less anxiety (Ryan & Connell, 1989), enhanced achievement (Grolnick, Ryan, & Deci, 1991), a higher level of satisfaction (Deci, Connell, & Ryan, 1989), and better physical and psychological health (Langer & Rodin, 1976). It thus seems desirable for socializing agents to present requests, limits, and extrinsically motivating structures in a way that promotes integration and self-determination rather than introjection and internally controlling regulation.

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