The Support of Autonomy and the Control of Behavior

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In this article we suggest that events and contexts relevant to the initiation and regulation of intentional behavior can function either to support autonomy (i.e., to promote choice) or to control behavior (i.e., to pressure one toward specific outcomes). Research herein reviewed indicates that this distinction is relevant to specific external events and to general interpersonal contexts as well as to specific internal events and to general personality orientations. That is, the distinction is relevant whether one's analysis focuses on social psychological variables or on personality variables. The research review details those contextual and person factors that tend to promote autonomy and those that tend to control. Furthermore, it shows that autonomy support has generally been associated with more intrinsic motivation, greater interest, less pressure and tension, more creativity, more cognitive flexibility, better conceptual learning, a more positive emotional tone, higher self-esteem, more trust, greater persistence of behavior change, and better physical and psychological health than has control. Also, these results have converged across different assessment procedures, different research methods, and different subject populations. On the basis of these results, we present an organismic perspective in which we argue that the regulation of intentional behavior varies along a continuum from autonomous (i.e., self-determined) to controlled. The relation of this organismic perspective to historical developments in empirical psychology is discussed, with a particular emphasis on its implications for the study of social psychology and personality.

For several decades American psychology was dominated by associationist theories. Assuming that behavior is controlled by peripheral mechanisms, these theories held that the initiation of behavior is a function of stimulus inputs such as external contingencies of reinforcement (Skinner, 1953) or internal drive stimulations (Hull, 1943) and that the regulation of behavior is a function of associative bonds between inputs and behaviors that develop through reinforcement processes. With that general perspective, the central processing of information was not part of the explanatory system, so concepts such as intention were considered irrelevant to the determination of behavior.

During the 1950s and 1960s, associationist theories gave way to cognitive theories in which the processing of information was assumed to play an important role in the determination of behavior. On the basis of this assumption, the initiation of behavior was theorized to be a function of expectations about behavior-outcome contingencies and of the psychological value of outcomes (e.g., Atkinson, 1964; Tolman, 1959; Vroom, 1964), and the regulation of behavior was seen as a process of comparing one's current state to a standard (i.e., the desired outcome) and then acting to reduce the discrepancy (e.g., Kanfer, 1975; Miller, Galanter, & Pribram, 1960). Thus, the cognitive perspective shifted the focus of analysis from the effects of past con-

sequences of behavior to expectations about future consequences of behavior. The concept of intentionality (Lewin, 1951) became important because behavior, whether implicitly or explicitly, was understood in terms of people's intentions to act in a way that would yield certain outcomes.

Within the concept of intentionality, however, a further distinction can usefully be made. Some intentional behaviors, we suggest, are initiated and regulated through choice as an expression of oneself, whereas other intentional behaviors are pressured and coerced by intrapsychic and environmental forces and thus do not represent true choice (Deci & Ryan, 1985b). The former behaviors are characterized by autonomous initiation and regulation and are referred to as *self-determined;* the latter behaviors are characterized by heteronomous initiation and regulation and are referred to as *controlled.*[1]

We shall argue that the distinction between self-determined and controlled behaviors has ramifications for the quality of action and experience and is relevant to the study of both social contexts and personality.

Intentionality and Autonomy

An intention is generally understood as a determination to engage in a particular behavior (Atkinson, 1964). In the cognitive theories of motivation and action (e.g., Heider, 1960; Lewin, 1951; Tolman, 1959), which have their roots in Gestalt psychology, having an intention implies personal causation and is equivalent to being motivated to act. Intentions are said to

[1] Like most dichotomies in psychology, being self-determined versus controlled is intended to describe a continuum. Behaviors can thus be seen as being more or less self-determined.

derive from one's desire to achieve positively valent outcomes or avoid negatively valent ones.

Using an intentional perspective, psychologists working in a neo-operant reinforcement tradition have emphasized that people's beliefs about whether certain behaviors are reliably related to desired outcomes are of central import. An abundance of research has shown, for example, that when a situation is structured so that outcomes are independent of behaviors (Seligman, 1975) or when people have a generalized belief that behaviors and outcomes are independent (Rotter, 1966), nonintentionality and maladaptation are likely to result. However, believing that behaviors are reliably related to outcomes is not enough to ensure a high level of motivation and adaptation. People must also believe that they are sufficiently competent to execute the requisite behaviors (e.g., Bandura, 1977). Indeed, the expectation of incompetence, like the expectation of behavior-outcome independence, has been shown to result in low motivation and maladaptation (Abramson, Seligman, & Teasdale, 1978). In sum, the cognitive perspective maintains that when people believe that desired outcomes will follow reliably from certain behaviors and that they are competent to execute those behaviors, they will display intentionality and experience personal causation (Heider, 1958).

Our organismic approach diverges from the cognitive approach by distinguishing between those intentional behaviors that are initiated and regulated autonomously and those that are controlled by intrapersonal or interpersonal forces. Whereas the cognitive approach equates the concepts of intention and choice (Lewin, 1951), the organismic approach reserves the concept of choice for those intentional behaviors that are autonomously initiated and regulated, and it uses the concept of control for those intentional behaviors that are not autonomous. Thus, although having perceived control over outcomes (i.e., perceiving behavior–outcome dependence and competence) promotes intentionality, it does not ensure that the intentional behavior will be initiated and regulated autonomously.

The concept of autonomy is a theoretical rather than empirical one, though it has clear empirical consequences. Autonomy connotes an inner endorsement of one's actions, the sense that they emanate from oneself and are one's own. Autonomous action is thus chosen, but we use the term *choice* not as a cognitive concept, referring to decisions among behavioral options (e.g., Brehm & Brehm, 1981), but rather as an organismic concept anchored in the sense of a fuller, more integrated functioning. The more autonomous the behavior, the more it is endorsed by the whole self and is experienced as action for which one is responsible.

Let us clarify this point through some examples. First consider the behavior of an anorexic person abstaining from food. Clearly, there is intentionality, yet the person would not appropriately be described as acting autonomously (or through choice), for the experience is one of compulsion (Strauss & Ryan, 1987). In a similar vein, the behavior of someone who is desperately seeking approval or avoiding guilt is intentional, but it is not autonomous. The person is compelled to engage in the behavior and would not experience a sense of choice. Finally, a person who follows a therapist's suggestion not out of an integrated understanding but rather out of deference to the thera-

pist's authority is behaving intentionally, but until the action is self-initiated and grasped as one's own solution it would not be characterized as autonomous.

When autonomous, people experience themselves as initiators of their own behavior; they select desired outcomes and choose how to achieve them. Regulation through choice is characterized by flexibility and the absence of pressure. By contrast, being controlled is characterized by greater rigidity and the experience of having to do what one is doing. There is intention, but lacking is a true sense of choice. When controlled, people are, in the words of deCharms (1968), "pawns" to desired outcomes, even though they intend to achieve those outcomes.

Initiation and Regulation of Behavior

When someone engages in a behavior, there are generally aspects of the context that play a role in the initiation and regulation of that behavior. We have argued (Deci & Ryan, 1985b) that these contextual factors do not, in a straightforward sense, determine the behavior. Instead, the person gives psychological meaning (what we call *functional significance*) to those contextual factors, and that meaning is the critical element in determination of the behavior.

Of central concern to the issue of autonomy and control in human behavior is whether people construe contexts as supporting their autonomy (i.e., encouraging them to make their own choices) or controlling their behavior (i.e., pressuring them toward particular outcomes). Thus, this review will consider varied social–contextual factors that have a functional significance of being either *autonomy supportive* or *controlling*,[2] and it will relate each type of functional significance to the quality of people's experience and behavior. However, dispositional or person factors are also relevant to the study of autonomy and control. There are evident individual differences in the functional significance people give to contextual factors. Furthermore, individual difference measures of autonomy and control orientations have been used to predict people's experience and behavior directly, without reference to contextual factors. The current review is intended to give substance to the theoretical concepts of autonomy and control by examining research on both contextual and person factors that are relevant to that distinction. In addition, it will compare this organismic perspective to other perspectives within empirical psychology.

Contextual Factors

There are two broad sets of studies, generally considered to be in the province of social psychology, that focus on the autonomy supportive versus controlling distinction. The first set explored specific environmental events—things like task-contingent rewards, positive feedback, or imposed deadlines—that tend to promote either self-determined or controlled behaviors and the qualities associated with each. The second set of studies focused

[2] According to cognitive evaluation theory (Deci & Ryan, 1985b), inputs can also have an amotivating functional significance. These inputs signify or promote incompetence at reliably obtaining desired outcomes. They are not relevant to this discussion, however, as they promote nonintentional responding and impersonal causation.

on interpersonal or social contexts, showing not only that general contexts can have either an autonomy-supportive or a controlling functional significance, but also that this varied functional significance has predictable effects on people's experience, attitudes, and behavior within those settings.

When the autonomy supportive versus controlling distinction was initially made (e.g., Deci & Ryan, 1980; Deci, Schwartz, Sheinman, & Ryan, 1981), it was hypothesized that autonomy-supportive events and contexts would maintain or enhance intrinsic motivation and that controlling events and contexts would undermine intrinsic motivation. Because intrinsic motivation has been so widely explored as the dependent variable in studies of autonomy-supportive versus controlling events and contexts, the effect of an event or context on intrinsic motivation can be used as one criterion for classifying whether that event or context tends to be experienced as autonomy supportive or controlling. Thus, within the reviews of research on external events and on interpersonal contexts, we will first present studies that used intrinsic motivation as a dependent variable, so as to specify the average functional significance of particular events or contexts. Then, within each of the two reviews, we will move on to studies that have explored the relation of those factors to other variables so as to explicate empirically the concomitants and consequences of self-determined versus controlled behavior.

External Events: Autonomy Supportive or Controlling

The term *event* refers to a specifiable occurrence or condition relevant to the initiation and regulation of behavior. The offer of a reward, for example, is an event, as is an instance of competence feedback, a demand, a deadline, and an opportunity for choice. The most frequently studied events have been rewards, though many others have also been explored. In this section, studies of the effects of various events on intrinsic motivation will be reviewed so as to allow each event to be classified as tending to be either autonomy supportive or controlling.

Rewards. Dozens of studies have explored the effects of rewards on intrinsic motivation. These have included monetary payments (Deci, 1971), good-player awards (Lepper, Greene, & Nisbett, 1973), food (Ross, 1975), and prizes (Harackiewicz, 1979). In general, rewards have been found to undermine intrinsic motivation. When people received rewards for working on an interesting activity, they tended to display less interest in and willingness to work on that activity after termination of the rewards than did people who had worked on the activity without receiving a reward. This phenomenon, labeled the *undermining effect* (Deci & Ryan, 1980), has been most reliably obtained when rewards were expected (Lepper et al., 1973), salient (Ross, 1975), and contingent on task engagement (Ryan, Mims, & Koestner, 1983).

Ryan et al. (1983) pointed out that when rewards are differently structured, they have discernibly different effects. The authors provided a taxonomy of reward structures and related it to reward effects. Their review indicated that task-noncontingent rewards—those that are given independent of task engagement—were least likely to undermine intrinsic motivation because the reward is not given for doing the activity and thus is not salient as a control. Task-contingent rewards—those made

contingent on doing the activity—have been consistently and reliably shown to undermine intrinsic motivation, presumably because their controlling function is salient. The effects of performance-contingent rewards—those given for attaining a specified level of good performance—are more complicated. Because they inherently provide positive competence feedback, the appropriate comparison condition is one that conveys the same feedback without a reward. When such comparisons have been made, performance-contingent rewards have generally been found to undermine intrinsic motivation, although they have sometimes been shown to maintain or enhance intrinsic motivation when the controlling aspect is minimized and competence cues are emphasized (Harackiewicz, Manderlink, & Sansone, 1984).

To summarize, many studies have shown that rewards, on average, undermine people's intrinsic motivation. It appears, therefore, that rewards tend to be experienced as controlling, which of course makes sense, as rewards are typically used to induce or pressure people to do things they would not freely do. When people behave in the presence of reward contingencies, the rewards tend to have a functional significance of control, thus representing an external event that restricts self-determination, although under certain circumstances they can be used to support self-determination.

Threats and deadlines. Using a modified avoidance conditioning paradigm, Deci and Cascio (1972) found that subjects who solved interesting puzzles to avoid an unpleasant noise demonstrated less subsequent intrinsic motivation for the activity than did subjects who solved the puzzles without the threat of noise. Amabile, DeJong, and Lepper (1976) found that the imposition of a deadline for the completion of an interesting activity also decreased subjects' intrinsic motivation for that activity. It appears, therefore, that these events, like rewards, tend to be experienced as controlling and thus to diminish people's self-determination.

Evaluation and surveillance. Other experiments have indicated that the mere presence of a surveillant or evaluator, even without rewards or aversive consequences, can be detrimental to intrinsic motivation and thus, we suggest, to self-determination more generally. Lepper and Greene (1975), for example, found that surveillance by a video camera undermined the intrinsic motivation of children, and Plant and Ryan (1985) found the same result for college students. Pittman, Davey, Alafat, Wetherill, and Kramer (1980) reported that in-person surveillance also undermined intrinsic motivation.

Harackiewicz et al. (1984) found that subjects who were told that their activity would be evaluated displayed less subsequent intrinsic motivation than did subjects who were not told this, even though the evaluations were positive. Smith (1974) found the same results for intrinsic motivation to learn. Similarly, Benware and Deci (1984) and Maehr and Stallings (1972) have found that learning in order to be tested or externally evaluated has detrimental effects on intrinsic motivation for learning.

The effects of evaluation and surveillance are not surprising, as both are integral to social control. These events tend to limit self-determination and thus reduce intrinsic motivation even when they are not accompanied by explicit rewards or punishments.

Choice. Autonomy-supportive events are defined as those

that encourage the process of choice and the experience of autonomy. The one type of event that both fits the definition and has been shown, on average, to enhance intrinsic motivation is the opportunity to choose what to do.

Zuckerman, Porac, Lathin, Smith, and Deci (1978) found that when college student subjects were given a choice about which puzzles to work on and about how much time to allot to each, they were more intrinsically motivated during a subsequent period than were no-choice subjects in a yoked comparison group. The provision of choice enhanced their intrinsic motivation. Swann and Pittman (1977) reported similar results in an experiment with children.

Positive feedback. The event of positive competence feedback has been widely studied as it relates to intrinsic motivation.[3] Several studies have found that it increased intrinsic motivation (Blanck, Reis, & Jackson, 1984; Boggiano & Ruble, 1979; Vallerand & Reid, 1984), although this has occurred only under certain circumstances (Fisher, 1978; Ryan, 1982) or for certain kinds of people (Boggiano & Barrett, 1985; Deci, Cascio, & Krusell, 1975; Kast, 1983). Taken together, the studies indicate that positive competence feedback neither supports autonomy nor controls behavior per se. It can enhance intrinsic motivation by affirming competence (e.g., Harackiewicz, Manderlink, & Sansone, in press) because intrinsic motivation is based in the need for competence as well as the need for self-determination, although it will do so only when the sense of competence is accompanied by the experience of self-determination (Fisher, 1978; Ryan, 1982).[4] But it can also undermine intrinsic motivation by being experienced as a form of interpersonal control (Ryan et al., 1983). The Harackiewicz, Abrahams, and Wageman (1987) article in this special section focuses on the issue of competence, whereas our article focuses on self-determination.

Effects and Correlates of Autonomy-Supportive Versus Controlling Events

The studies just reported used intrinsic motivation as the primary dependent variable and were used to help classify events as tending to be either autonomy supportive or controlling. It is interesting to note that more of the events manipulated in these experiments were experienced as controlling than as autonomy promoting. This makes sense, however, because autonomy must emanate from oneself and can therefore only be facilitated by contextual events, whereas control is something that can be done to people by contextual events and is therefore more easily evidenced. We shall now address additional effects of these autonomy-supportive versus controlling events to begin explicating the qualities of self-determined versus controlled behaviors.

Interest–enjoyment. Along with the free-choice measure of intrinsic motivation, self-reports of interest are often obtained. Ryan et al. (1983) reported a correlation of .42 between the behavioral measure of intrinsic motivation and self-reports of interest, and Harackiewicz (1979) reported a correlation of .44 between intrinsic motivation and expressed enjoyment. Although research has not always found these strong correlations (see Ryan & Deci, 1986), self-reports of interest–enjoyment do appear to be related to intrinsic motivation. Furthermore, numerous studies that have not used the free-choice, behavioral

measure have found that postexperimental interest–enjoyment is higher following autonomy-supportive events than following controlling events (e.g., Enzle & Ross, 1978).

Creativity. Amabile (1979) reported that subjects who were told that their work would be evaluated produced artistic collages that were rated as less creative than those produced by subjects who did not expect evaluations. Similar effects were found for surveillance (see Amabile, 1983). Furthermore, when children competed for a reward, they produced less creative collages than those produced in a noncompetitive condition (Amabile, 1982), and when children contracted for rewards they were also less creative (Amabile, Hennessey, & Grossman, 1986). Additionally, Kruglanski, Friedman, and Zeevi (1971) found that when subjects who wrote stories were rewarded with the opportunity to engage in an interesting activity in the future, their stories were judged to be less creative than the stories of subjects who were not rewarded. In sum, events that are typically controlling appear to affect creativity negatively, whereas events that are more autonomy supportive seem to promote creativity.

Cognitive activity. Results similar to those for creativity have been reported for cognitive flexibility. McGraw and McCullers (1979) found that monetarily rewarded subjects had a more difficult time breaking set when doing Luchins-type (1942) water-jar problems than did nonrewarded subjects. Benware and Deci (1984) reported that evaluative tests impaired college students' conceptual learning in addition to undermining their intrinsic motivation. Grolnick and Ryan (1987) found impairments in conceptual learning of fifth-grade subjects who learned material under a controlling-evaluative condition rather than an autonomy-supportive one. It appears that when cognitive activity is controlled, it is more rigid and less conceptual, perhaps with a more narrow focus, than when it is self-determined.

Emotional tone. Garbarino (1975) studied fifth- and sixth-grade girls who were rewarded with movie tickets for teaching younger girls how to do a sorting task. He reported that the rewarded tutors were more critical and demanding than were nonrewarded tutors. In a complementary study, children induced to interact with another child in order to play with a nice game had less positive impressions of that other child than did children who had not been focused on the incentive (Boggiano, Klinger, & Main, 1985). Controlling events, it seems, tend to induce a negative emotional tone and a less favorable view of others in that situation.

Maintenance of behavior change. Rewards have also been studied as they relate to the persistence of behavior change following the termination of treatment conditions. A study by Dienstbier and Leak (1976) of a weight-loss program, for example, indicated that although rewards facilitated weight loss, their termination led to much of the lost weight's being regained.

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[3] Negative feedback has also been studied and has been found to reduce intrinsic motivation; however, we interpret these decreases as resulting from the feedback's being experienced as amotivating rather than controlling.

[4] In cognitive evaluation theory (Deci & Ryan, 1985b), inputs that both affirm competence and promote self-determination are referred to as informational.

When behavior is controlled by events such as rewards, the behavior tends to persist only so long as the controlling events are present. In terms of effective behavior change in therapeutic settings, the implication is that behavior change brought about through salient external controls is less likely to persist following the termination of treatment than is change that is brought about more autonomously. Behavior and personality change will be maintained and transferred, we have argued, when the change is experienced as autonomous or self-determined (Deci & Ryan, 1985b).

To summarize, behavior undertaken when the functional significance of events is autonomy supportive has been related to greater interest, more creativity, more cognitive flexibility, better conceptual learning, a more positive emotional tone, and more persistent behavior change than has behavior undertaken when the functional significance of events is controlling. Thus far, research has related these motivationally relevant dependent variables primarily to the events of rewards and evaluation.

Interpersonal Contexts: Autonomy Supportive Versus Controlling

In the preceding discussion we described research on specific events relevant to the initiation and regulation of behavior. Numerous other studies have focused on interpersonal contexts rather than specific events. For example, in interpersonal situations the general ambience can tend either to support autonomy or to control behavior. We now turn to that research on interpersonal contexts. We begin, of course, with studies in which intrinsic motivation was the dependent measure, because those are the ones that we use to establish the usefulness of the distinction.

Studies of autonomy-supportive versus controlling contexts have been of two types. Some are correlational field studies in which the functional significance of the context is measured and related to motivationally relevant variables of people in those contexts. The others are laboratory experiments in which events such as rewards or feedback are administered within experimentally created autonomy-supportive versus controlling contexts.

General contexts. In one field study (Deci, Nezlek, & Sheinman, 1981), teachers and children in fourth- through sixth-grade classrooms were subjects. The researchers used a psychometric instrument to measure individual teachers' orientations toward supporting children's autonomy versus controlling children's behavior. They reasoned that teachers oriented toward supporting autonomy would tend to create a classroom context that promoted self-determination, whereas those oriented toward control would tend to create a controlling context for the children. The researchers then assessed the intrinsic motivation of children in the classrooms by using Harter's (1981) measure and found a strong positive correlation between teachers' autonomy support and children's intrinsic motivation. In another study, Deci, Schwartz, Sheinman, and Ryan (1981) analyzed changes in children's intrinsic motivation from the second day of school to the end of the second month. They found that children of autonomy-supportive teachers became more intrinsically motivated relative to children of control-oriented teachers.

Events and interpersonal contexts. Earlier, we saw that some events tend to be experienced as supporting self-determination and others tend to be experienced as controlling, and now we have seen that contexts can also be characterized as tending either to support autonomy or to control. A few studies have explored the effects of the same event in different experimentally created contexts.

In one study, Ryan et al. (1983) explored contextual influences on the effects of performance-contingent rewards: those rewards that people receive for attaining a specified level of good performance. Previous research had shown that these rewards generally undermined the intrinsic motivation of their recipients relative to that of subjects who received no rewards but got the same performance feedback that was inherent in the performance-contingent rewards. This means, in essence, that the reward itself tends to be controlling unless its evaluative component is removed (Harackiewicz et al., 1984). Furthermore, however, the positive feedback that is conveyed by the reward can enhance intrinsic motivation by affirming one's competence.

Ryan et al. argued that the effect of a performance-contingent reward could be significantly affected by the way it is conveyed, in other words, by the interpersonal context within which it is received. Two groups of college student subjects received performance-contingent rewards. Those in one group were told that they would receive a $3 reward if they "performed well," and those in the other group were told that they would receive a $3 reward if they "performed well, as you *should.*" Following each of three puzzles, subjects received positive feedback that was in line with the initial induction. For example, half were told, "You have done well," and the other half were told, "You have done well, just as you should." Then, at the end of the performance period, subjects were given the reward either "for doing well" or "for doing well and performing up to standards." It was expected, of course, that words like *should* and *standards* would serve to create a controlling context and lead the subjects to experience the rewards as controlling. Results revealed a significant difference between the intrinsic motivation of the two groups of subjects. Those who received rewards in an autonomy-supportive context were more intrinsically motivated than were those who received rewards in a controlling context. In other words, the interpersonal context within which the event (i.e., the reward) was administered affected the functional significance of the event.

The Ryan et al. (1983) results are consistent with others reported by Harackiewicz (1979), who also found significant differences between the intrinsic motivation of two groups of high school subjects receiving performance-contingent rewards. She had made one administration of the rewards less controlling by allowing subjects to self-monitor their performance against a table of norms, and these subjects were more intrinsically motivated than others who were not allowed to self-monitor.

In another study, Ryan (1982) argued that positive competence feedback, which is not inherently either autonomy supportive or controlling, will be differentially interpreted as autonomy promoting or controlling depending on the nature of the interpersonal context within which it is embedded. College student subjects received positive feedback, which either was made

controlling through the use of additional words such as *should* (e.g., "Excellent, you did just as you should") or was noncontrolling. Again, results revealed that the subsequent intrinsic motivation of subjects who received positive feedback in an autonomy-supportive context was significantly greater than that of subjects who received it in a controlling context.

Finally, Koestner, Ryan, Bernieri, and Holt (1984) argued that it is even possible to constrain behavior in a way that will tend to be experienced as noncontrolling. In a field experiment with first- and second-grade children, limits were set regarding the children's being neat while painting a picture. Limits seem to be controlling by nature, yet they may be perceived as less controlling if they are set in a way that minimizes the use of control-related locution and acknowledges the probable conflict between what the limits require and what the person would want to do. The importance of the last point is that this acknowledgement conveys an appreciation of the perspective of the actor, thus decreasing his or her experience of being controlled. As expected, Koestner et al. found that children who received noncontrolling limits maintained their intrinsic motivation for painting (it did not differ from a no-limits comparison group), whereas those who received controlling limits showed significantly less intrinsic motivation.

Other Effects of Autonomy-Supportive Versus Controlling Contexts

The studies just reviewed all used the dependent variable of intrinsic motivation—assessed by the free-choice method, by self-reports of interest–enjoyment, or by Harter's (1981) questionnaire measure for children—to establish that the functional significance of interpersonal contexts can be either more autonomy supportive or more controlling. Numerous studies of autonomy-supportive versus controlling contexts have used other dependent variables. Ryan et al. (1983), for example, also assessed experiences of pressure and tension and found, as one would expect from the definition of control, that subjects in a controlling context experienced greater pressure and tension than did those in a noncontrolling context.

Self-esteem, perceived competence, and aggression. In the classroom studies reported earlier, the children also completed Harter's (1982) measure of perceived cognitive competence and self-esteem. Deci, Nezlek, and Sheinman (1981) reported significant positive correlations between teachers' autonomy support and children's perceived cognitive competence and self-esteem. Furthermore, Deci, Schwartz, Sheinman, and Ryan (1981) reported that children in autonomy-supportive classrooms increased in perceived competence and self-esteem during the first 2 months of a school year relative to children in controlling classrooms. Finally, a study by Ryan and Grolnick (1986) found positive correlations between children's perceptions of the classroom as being autonomy supportive and their own perceived cognitive competence and self-esteem. With these three different research strategies, researchers found that when the interpersonal context of children's learning was autonomy supportive, the children perceived themselves to be more competent in their cognitive activity and felt better about themselves than when the context was controlling.

Ryan and Grolnick (1986) also had the children create stories about a neutral classroom scene using a projective technique. The researchers then rated the stories for thematic content. Results revealed that children who perceived their own classrooms to be autonomy promoting wrote about teachers who supported autonomy and children who were more self-determined, whereas children who perceived their classrooms to be controlling wrote stories with control themes. Furthermore, children who wrote about controlling classrooms projected more aggression into the classrooms than did children who portrayed the classroom as less controlling. Contrary to the common view that controls should be used to curb aggression, these results suggest that the aggression of children may be linked to their feeling controlled.

Trust. Deci, Connell, and Ryan (1986) explored the relation between interpersonal contexts in work organizations and the attitudes and perceptions of employees in those environments. To do this, they developed a psychometric instrument to assess managers' orientations toward supporting autonomy versus controlling behavior. The instrument was conceptually analogous and structurally similar to the measure of teachers' orientations used by Deci, Schwartz, Sheinman, and Ryan (1981). The most salient finding in this study was that managers' orientations were strongly related to subordinates' level of trust. Subordinates with control-oriented managers had less trust in the corporation and its top management than did those with autonomy-supporting managers. This was particularly interesting because the data were collected in a large, geographically dispersed corporation, where most subjects had never met the corporate officers. Although the data were merely correlational, they suggest that the interpersonal context created by one's immediate manager may affect one's feelings and attitudes not only about the immediate environment but also about the whole organization.

Creativity and spontaneity. Koestner et al. (1984) used Amabile's (1983) consensual assessment system to rate the paintings of 6- and 7-year-old children who had been given either autonomy-supportive or controlling limits. Results indicated that children who painted with autonomy-oriented limits were judged to have more creative and technically better paintings than were children who painted with controlling limits. The former children also showed greater spontaneity and less constriction in their paintings than did the latter. Whether an event itself or the context within which an event occurs tends to have a controlling functional significance, the behavior associated with it is likely to be less creative and more constricted. Creativity, it seems, is fostered by events and contexts that support autonomy.

Preference for choice. In an experiment by Haddad (1982), 10- and 11-year-old children worked with age-appropriate anagrams. Half the children were given positive feedback with controlling locution, and half were given noncontrolling positive feedback. Subsequently, the children were told that they would be doing four more anagrams. Furthermore, they were told that they could select none, some, or all four of the ones they would work on and that the experimenter would select the rest. Results of the study indicated that when children had been controlled, they said they wanted to make fewer of the choices than when they had not, though this was primarily true for girls. It seems

that the girls, when they were controlled, became more prone to allowing others to make their future choices for them.

Behavior. Deci, Spiegel, Ryan, Koestner, and Kauffman (1982) did a study of teaching behavior in which they created a more autonomy-supportive versus a more controlling context for subjects whose job it was to teach other subjects how to solve spatial relations puzzles. The controlling context was created by emphasizing to the teachers that it was their responsibility to see to it that their students performed up to high standards in the puzzle solving. This was expected to be experienced by the teachers as pressure toward particular outcomes and thus to have a functional significance of control.

The 20-min teaching sessions that followed were tape-recorded and subsequently analyzed by raters. The analyses revealed remarkable differences in the behavior of the two groups of teachers. Those who taught in a controlling context made about three times as many utterances, and many more of their utterances tended to be directives and to contain such controlling words or phrases as *should, have to, must,* and *ought to* than was the case for those who taught in a less controlling context. In addition, raters judged those who taught in the controlling context to be more controlling in their teaching behavior than those who taught in the less controlling context.

Teachers who had received the controlling induction proceeded from one puzzle to another, giving the solutions, as if rote memorization of solutions to specific problems was the route to learning problem solving. Teachers in the other group allowed their students to experiment with their own solutions. These teachers gave hints, but they seldom gave solutions. As a result of the different teaching, the students performed differently. Those with controlling teachers assembled twice as many puzzles as those with autonomy-supporting teachers, but they independently solved only one fifth as many puzzles.

In sum, the results suggest that when people are pressured to make others perform, they themselves tend to become more controlling. That in turn has negative consequences for the self-determination of people they relate to.

Health. Langer and Rodin (1976) reported a study of the institutionalized aged in which an ambience that promoted self-determination—what we call an autonomy-supportive interpersonal context—was created for some of the residents. The intervention included a meeting devoted to discussing the residents' taking greater responsibility for themselves (vs. telling them that they would be well cared for by the staff), the opportunity to make choices about when they would attend a movie (vs. being assigned a time), and being given the gift of a plant that they were responsible to care for (vs. being given a plant that the staff would take care of for them).

Results of this study indicated that those elderly residents in the context that emphasized self-determination improved on both questionnaire and behavioral measures of well-being relative to those who lived in a context that did not. In an 18-month follow-up study, Rodin and Langer (1977) reported that there were still significant differences in well-being such that those residents whose self-determination had been supported were healthier than the other residents.

The Langer and Rodin study is often discussed as a study of control over outcomes; however, it went beyond merely providing control. The intervention not only gave residents control; it

encouraged them to take initiative, to be more autonomous and self-determining. This can be contrasted with a study by Schulz (1976) in which elderly residents were given control over the hours they would be visited by volunteers in a visitation program. That intervention did not, however, encourage autonomous initiation and self-determination. The results did indicate short-term positive health effects for having control over outcomes, but a follow-up study (Schulz & Hanusa, 1978) showed that after the visitation program was terminated, the subjects who had had control over outcomes evidenced significant declines in health. Apparently, it is only when people learn to experience their environment as supporting self-determination, only when they become more autonomous (rather than merely perceiving that they have control over outcomes), that there will be long-term positive effects on their health.

All of the research thus far reported has focused on the effects of inputs from the environment, whether specific events or interpersonal contexts. From these social psychological investigations, there is indication that when contextual factors function to support autonomy rather than to control, people tend to be more intrinsically motivated, more creative, more cognitively flexible, more trusting, more positive in emotional tone, and more healthy; they tend to have higher self-esteem, perceived competence, and preference for choice; their behavior tends to be appropriately persistent and to be less controlling; and they project less aggression. We turn now to studies that have focused on person variables rather than contextual variables: studies that are considered more in the province of personality.

Person Factors

Two sets of studies have focused on person factors. The first is composed of laboratory experiments on intrapersonal events or states—person processes such as ego involvement—that can be characterized as being either autonomy supportive or controlling. The second is composed of individual difference studies that focus primarily on causality orientations, which are people's tendencies to orient toward events and contexts that are autonomy supportive and those that are controlling.

Intrapersonal Events: Autonomy Versus Control

Many of the inputs relevant to the initiation and regulation of behavior are intrapsychic and can be independent of external circumstances. Imagine, for example, a colleague who is lying on the beach with his or her mind idly wandering. An idea for a new experiment spontaneously occurs to the person, so with excitement he or she begins to design the experiment. The event that prompted the behavior was an internal, cognitive–affective event that could be characterized as autonomous. But one could easily imagine the person, while on vacation, designing an experiment out of an internal obligation, with the pressured feeling that he or she has to do an experiment to prove his or her worth. This event would also be intrapersonal, but it would be controlling. We predict that the consequences of these two types of internal events, which prompted the same overt behaviors, would be quite different and would have parallels to the consequences of the two types of external events.[5]

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[5] Internal events can also be amotivating, though again they are not germane to the current discussion.

Although this hypothesis has received less empirical attention than the hypotheses discussed earlier, several studies have supported it. Ryan (1982) argued that the state of ego involvement as described by Sherif and Cantril (1947), a condition where people's self-esteem is hinged on performance, leads the people to pressure themselves in a way similar to the way external forces can pressure them. He suggested that this type of ego involvement is controlling and will thus undermine self-determination. In his study, college students worked on hidden-figures puzzles. Half of them were told that hidden-figures performance reflects creative intelligence and as such is used in some IQ tests. These subjects, being students in a competitive university, were expected to become quite ego involved and thus to be internally controlling. The other subjects were given a more task-involving induction, which was expected to initiate more autonomous self-regulation.

Results of this study supported the hypothesis. Those subjects who had been given the ego-involving induction displayed significantly less intrinsic motivation in a subsequent free-choice period than did those who had been given the task-involving induction. In addition, those subjects in the internally controlling (i.e., ego-involved) condition reported experiencing significantly greater pressure and tension than did those in the internally noncontrolling (i.e., task-involved) condition. It appears, therefore, that people can—and presumably do—pressure themselves in much the same way that they can be pressured by external events, and the results of controlling themselves in these ways are similar to the results of being externally controlled.

A follow-up study by Ryan and Deci (1986) used tape-recorded inductions of ego and task involvement to rule out the possibility of interpersonal control (e.g., the subject's trying to please the experimenter). The results replicated those of the Ryan (1982) experiment. Ego involvement in these studies refers to the induction of an inner, evaluative pressure. However, other researchers such as Sansone (1986) use ego involvement simply to mean that the value of an activity is highlighted for subjects, in which case it does not undermine intrinsic motivation.[6]

Plant and Ryan (1985) did a quite different study of internally controlling regulation and reported complementary results. In it they repeated the ego-involved/task-involved manipulation, again finding that ego involvement decreased intrinsic motivation, but they crossed this in a factorial design with three levels of self-consciousness. Using the concept of objective self-awareness introduced by Duval and Wicklund (1972), Plant and Ryan suggested that when people are objectively self-aware—aware of themselves as an object or as viewed by another—they are likely to regulate themselves controllingly (i.e., as if they were concerned about another's evaluation of them). Stated differently, objective self-awareness can constitute a kind of self-surveillance. Thus, Plant and Ryan (1985) hypothesized that the experimental treatments that have induced objective self-awareness would similarly induce internally controlling regulation and would therefore undermine intrinsic motivation. One third of the subjects worked in front of a mirror and one third worked in front of a video camera. The remaining third received no self-awareness induction. The self-awareness manipulations yielded a significant main effect, with the camera condi-

tion leading to the lowest level of intrinsic motivation and the mirror condition to the next lowest. Both self-consciousness groups differed significantly from the non-self-consciousness, comparison group.

Plant and Ryan (1985) had also premeasured subjects on public self-consciousness (Fenigstein, Scheier, & Buss, 1975), the dispositional tendency to view oneself as if through the eyes of another. They found that this variable was also negatively related to intrinsic motivation, presumably because the nature of one's self-focus is directly related to the relative autonomy of behavioral regulation, with public self-consciousness relating to a more controlling form of self-focus. The theoretical links between aspects of public self-consciousness, conformity, and social control await further explication.

Effects of Internal Events: Autonomy Versus Control

The consequences of autonomous versus internally controlled initiation and regulation have been less well explored though we predict the same types of consequences as those reported for external initiation and regulation. Ryan (1982) found greater pressure and tension associated with internally controlling than with more autonomous self-regulation, and that parallels the Ryan et al. (1983) finding of greater pressure and tension associated with controllingly administered rewards than with noncontrolling rewards. We predict that such parallels would also appear for the other relevant dependent variables such as emotional tone and health. Indeed, it is possible that internally controlling regulation is involved in various stress-related syndromes.

Working in the area of achievement motivation, Nicholls (1984) recently suggested that there would be differences in the preferences and performance of task-involved versus ego-involved subjects. When task involved, he hypothesized, subjects will prefer moderately difficult tasks (ones that represent optimal challenges). When ego involved, however, subjects will focus on proving their competence (or not appearing incompetent), so they will select either very easy tasks that will allow them to succeed or very difficult tasks so they will have a good excuse for failing. Although Nicholls (1984) did not test these hypotheses directly, he reviewed studies that provide inferential support. For our purposes, the importance of the work is it suggestion that ego-involved subjects behave and attribute in a more defensive and self-aggrandizing way than do task-involved subjects. Being internally controlled leads subjects to focus on proving and defending themselves rather than engaging in activities for growth and challenge.

In sum, we have argued that the autonomy promoting versus controlling distinction is relevant to the categorization of intrapersonal events just as it is to the categorization of contextual events. When behavior is prompted by thoughts such as "I have to . . ." or "I should . . ." (what we call internally controlling events), the behavior is theorized to be less self-determined than when it is characterized by more autonomy-related thought

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[6] Ryan (1982) suggested that the term *superego involvement* (rather than *ego involvement*) would in some ways be more accurately descriptive of the internal state that we assert is controlling.

such as "I'd find it valuable to . . ." or "I'd be interested in . . ." Accordingly, we predict that the qualities associated with external controlling events and with external autonomy-supportive events will also be associated with their intrapsychic counterparts.

Causality Orientations

Elsewhere, we suggested that people have general orientations regarding what they attend to and how they initiate and regulate their behavior (Deci & Ryan, 1985a). These orientations are conceptualized with respect to the autonomy–control distinction, and they are theorized to influence the degree to which inputs are perceived as autonomy supportive or controlling. These personality characteristics are referred to as *causality orientations* and are labeled the *autonomy* orientation and the *control* orientation, respectively.[7] In validating a measure of these constructs, we provided further evidence about the concomitants of self-determined versus controlled behaviors.

The measure of general causality orientations was based on the assumption that people are to some degree oriented toward autonomy and to some degree oriented toward control, so the scale was constructed to measure each orientation independently rather than in a bipolar fashion. The separate orientations were then correlated with a variety of relevant variables. Because the method of investigation entailed correlating individual difference measures, the research in this section presents correlates of the autonomy orientation and the control orientation rather than antecedents and consequences of self-determined versus controlled regulation.

Correlated Constructs

Because autonomy support is said to promote self-determined functioning, people's autonomy orientation scores were expected to be positively correlated with other constructs that are theoretically linked to self-determination. Accordingly, Deci and Ryan (1985a, 1985b) reported positive correlations between autonomy scores and ego development (Loevinger, 1976), self-esteem (Janis & Field, 1959), and self-actualization (Shostrom, 1966). In addition, the autonomy orientation was found to be associated with being less self-derogating (Kaplan & Pokorny, 1969) and more oriented toward supporting the autonomy of children (Deci, Schwartz, Sheinman, & Ryan, 1981).

The control orientation, by contrast, was correlated with the Type A coronary-prone behavior pattern (Jenkins, Rosenman, & Friedman, 1967), which represents a pressured, competitive, ego-involved mode of behaving. It also correlated with public self-consciousness (Fenigstein et al., 1975), which measures the tendency to view oneself as if from the outside. Parenthetically, recall that Plant and Ryan (1985) reported a negative correlation between public self-consciousness and intrinsic motivation for an experimental task. Finally, the control orientation was moderately correlated with external locus of control (Rotter, 1966), although Rotter's external control is conceptually more similar to and empirically more strongly corrrelated with the third causality orientation, namely the impersonal orientation.

Behaviors, Attitudes, and Emotions

Causality orientations have also been correlated with a variety of behavioral and attitudinal measures. King (1984) used the autonomy scores of 50 people who were scheduled for voluntary cardiac surgery to predict the extent to which they would view the experience as a challenge rather than a threat. She found that the higher the patients' autonomy scores, the more their preoperative attitudes involved challenge rather than threat and the more their postoperative attitudes were positive.

In a spontaneous-learning study (Ryan, Connell, Plant, Robinson, & Evans, 1985), subjects who had completed the Causality Orientations Scale read a passage and used the Differential Emotions Scale (Izard, Dougherty, Bloxom, & Kotsch, 1974) to describe their feelings while reading the passage. Results showed a correlation between autonomy orientation scores and interest in the passage.

Deci et al. (1986) used a domain-specific version of the Causality Orientations Scale with 201 employees of a large corporation. Analyses revealed that the autonomy orientation was positively correlated with workers' trust in the corporation, their satisfaction with opportunities to make inputs, and their general satisfaction. It seems that workers who are more oriented toward autonomy experience their work situation differently, perhaps actually creating a different interpersonal environment for themselves, than do workers who are less oriented toward autonomy. This finding complements the earlier mentioned finding that employees with autonomy-supportive managers have a higher level of trust and more positive attitudes.

Research has also found the control orientation to be related to various behaviors, attitudes, and emotions. For example, Deci and Ryan (1985a) reported a negative correlation between the control orientation and the test performance of undergraduates in a large personality course. This finding adds important corroboration to the findings reported earlier that controlling external events impair learning (Benware & Deci, 1984; Grolnick & Ryan, 1987). When controlled, whether by events or contexts outside themselves or by their own orientations to experience situations as controlling, people tend to learn less well, particularly on conceptual material.

In the Ryan, Connell, et al. (1985) spontaneous-learning study, subjects' control-orientation scores were positively correlated with their negative feelings of distress and guilt. And finally, in the Deci et al. (1986) study of workers, control-orientation scores were positively correlated with the importance workers place on pay and benefits and were negatively correlated with the importance of trust in the supervisor and of the opportunity to make inputs. Control scores were also negatively related to workers' satisfaction with job security and with the opportunity to make inputs.

To summarize, person factors, whether studied in terms of specific internal events using an experimental paradigm or in terms of general causality orientations using an individual difference paradigm, have been shown to be related to the distinction between self-determined versus controlled behavior in

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[7] A third orientation, the impersonal orientation, refers to the tendency to orient to amotivating inputs, in other words, the tendency to experience oneself as being incompetent to attain desired outcomes.

ways that parallel the relation of external events and contexts to the two types of behavior. As such, it seems that both contextual and person factors can be analyzed in corresponding ways and that the parallel findings from these analyses provide multi-method validation of the self-determined versus controlled distinction.

Persons and Contexts

Much of the research related to this issue of autonomy and control in human behavior has focused on contextual factors. Yet the theory emphasizes that the functional significance of a contextual factor, rather than its objective characteristics, is the critical consideration in predicting the effects of that factor. Functional significance refers to the motivationally relevant psychological meaning that events or contexts are afforded or imbued with. This means that a person's perception of an event is an active construction influenced by all the kinds of factors herein discussed. And it is the person's own perception (i.e., construction) of the event to which he or she responds. The external event is an affordance (Gibson, 1979) for their constructive interpretations.

It is, of course, possible, on the basis of definitions, to predict whether events or contexts will have an autonomy-supportive or a controlling functional significance. This can be useful for purposes of prescriptive formulations. Conceptually, however, this is merely a matter of referring to the average functional significance that an event or context is likely to be given, as contextual factors can not be disembedded from the psychological meaning given them by the individual.

These points were illustrated in a recent investigation by Ryan and Grolnick (1986). School children in Grades 4 through 6 used a measure developed by deCharms (1976) to describe the degree to which their classroom climate (i.e., their teacher) tends to support autonomy or to control behavior. Consistent with the research reported earlier, the average ratings of the classroom climate correlated significantly with the children's mastery motivation, perceived competence, and self-esteem. However, when these average perceptions were partialed out of individual children's ratings, the residual predicted even more of the variance in the children's motivationally relevant variables than did the average.

It is interesting to consider the possibility that these unique child perceptions, which are associated with particular behaviors and affects, may in turn influence the actual context for that child. For example, if a child experiences the teacher as quite controlling, the child may relate to the teacher in a way that leads the teacher to be more controlling with that child, thus creating a truly interactive pattern of determination.

A similar person–context perspective can be seen to apply to the individual differences research. The causality-orientations concept is formulated in terms of whether one orients toward autonomy-supportive or controlling factors, many of which are in the context. The term *orients toward factors* encompasses a range of processes including acting on the context to create those factors, seeking contexts that contain those factors, selectively attending to those factors in the context, or projecting those factors into the context. Then, having oriented to those factors, the person is predicted to respond accordingly.

In these reciprocal ways, whether someone in the environment (e.g., a teacher or manager) attempts to control a person (or to support a person's autonomy) or whether the person orients toward others in the context who are controlling (or autonomy supportive), transactional patterns develop between the person and his or her social context.

From this perspective, one can see that the segregation of social psychological studies from personality studies is often arbitrary. The person is an active perceiver and an intentional behaver who acts in accord with a constructed view of the social context. That construction is influenced by both contextual and personal factors and may in turn actually affect how the social context responds to the person.

Self-Determined Versus Controlled Activity

The picture that emerges from this wide range of evidence is that when the functional significance of events or contexts is autonomy supportive, people initiate regulatory processes that are qualitatively different from those that are initiated when the functional significance of the events or context is controlling. Autonomy-supportive events and contexts facilitate self-determined or autonomous activity, which entails an inner endorsement of one's actions, a sense that they are emanating from oneself. Such activity is regulated more flexibly, with less tension and a more positive emotional tone, and this flexible use of information often results in greater creativity and conceptual understanding. When self-determined, people experience a greater sense of choice about their actions, and these actions are characterized by integration and an absence of conflict and pressure. Indeed, integration is the ultimate hallmark of autonomous regulation. By contrast, controlling events and contexts conduce toward compliance or defiance but not autonomy. Control, whether by external forces or by oneself, entails regulatory processes that are more rigid, involve greater pressure and tension and a more negative emotional tone, and result in learning that is more rote oriented and less integrated.

The Intrinsic–Extrinsic Metaphor

Intrinsically motivated behavior is by definition self-determined. It is done freely for the inherent satisfactions associated with certain activities and with undertaking optimal challenges. Many of the studies of self-determination have thus focused on intrinsic motivation. As a result, the self-determination versus control distinction has often been wrongly equated with the intrinsic versus extrinsic distinction. Even though intrinsically motivated behavior is the paradigmatic case of self-determination, it is not the only case of self-determined activity; extrinsically motivated behavior can also be self-determined.

Extrinsic motivation pertains to a wide variety of behaviors where the goals of action extend beyond those inherent in the activity itself. Persons can be described as extrinsically motivated whenever the goal of their behavior is separable from the activity itself, whether that goal be the avoidance of punishment or the pursuit of a valued outcome. Extrinsically motivated behavior is not necessarily either self-determined or controlled. One could willingly and freely pursue some extrinsic end (in

which case it would be autonomous), or one could be pressured toward a goal (in which case it would be controlled).

This highlights an important definitional matter regarding intrinsic versus extrinsic motivation. What distinguishes the two is merely a teleological aspect, whether the behavior is done for its inherent satisfaction (intrinsic) or is done in order to obtain a separable goal. Although this distinction has historical and practical importance (see Deci & Ryan, 1985b), it does not fully or adequately explicate the psychology of behavioral regulation because extrinsic or goal-oriented activity can vary considerably in terms of the degree to which it is autonomously regulated or controlled.

As an example, consider a person who derives considerable aesthetic pleasure from having a clean house but who does not enjoy the process of cleaning. If this person willingly chooses to clean the house, he or she would be self-determined in doing it. But the behavior would be extrinsic because it is instrumental to having a clean house, and the satisfaction is in the outcome rather than in the behavior itself. By contrast, consider another person who cleans because of a feeling that he or she has to, whether to get the approval of a business associate who will be visiting, to avoid guilt, or to satisfy a compulsion. In the case of this latter person, the extrinsically motivated behavior would be controlled.

In recent developmental work, Ryan, Connell, and Deci (1985) have outlined the processes through which children take on and eventually integrate extrinsic regulations so that initially external regulations can be the basis of self-determined functioning. The natural development of extrinsic motivation is described as a process of progressive internalization in which there is movement away from dependence on external prompts and controls toward greater self-regulation (Connell & Ryan, 1986; Ryan, Connell, & Grolnick, in press). This process involves identification with and integration of originally externally regulated action and results in more autonomous self-regulation. Work by Grolnick and Ryan (1986, 1987) and by Connell and Ryan (1986) indicates that the more extrinsic behavior is characterized by autonomy, the less it is accompanied by pressure and anxiety and the more it is associated with personal valuing of the goals involved.

Deci and Ryan (1985b) have hypothesized that internalization and particularly identification are more likely to occur under autonomy-supportive than under controlling conditions. Two recent studies have provided initial support for this hypothesis. In the first, Grolnick and Ryan (1986) found that elementary-school children became more self-determined at extrinsically motivated activities with autonomy-supportive teachers than with controlling teachers. Furthermore, the researchers reported that children with autonomy-supportive parents were more self-determined in doing chores and homework than were children with controlling parents. Earlier research by Hoffman (1960) on moral behavior showed the complementary result that power-assertive (i.e., controlling) parenting styles were less effective for the internalization of moral behaviors than were styles more closely aligned to autonomy support.

In a second, experimental study (Eghrari & Deci, 1986), subjects engaged in an uninteresting computer-tracking task. Two groups of subjects received a rationale for doing the task and positive feedback about their performance on it. For one group the context was autonomy supportive, and for the other it was controlling. Results indicated that the autonomy-supportive context led to greater internalization of task value and greater persistence than did the controlling context and that internalization was positively correlated with experienced self-determination.

These studies suggest that extrinsically motivated behaviors can become self-determined through the process of integration and that the integrative process itself depends on the context's having an autonomy-supportive functional significance. In such cases the behavior is still extrinsically motivated, however, because the activity is still engaged in for reasons other than its inherent interest.

The Internal–External Metaphor

The internal–external distinction has been widely used in the past three decades in studies related to the regulation of behavior. Therefore, we shall briefly discuss its relevance to autonomy versus control. Basically, the metaphor has been used in two broad ways: to describe who or what is believed to control outcomes and to describe the experienced source of causality of one's behavior. Consider these in turn.

Rotter (1966) used the internal–external distinction to refer to expectations about control over reinforcements. One has an internal *locus of control* if one expects behaviors and reinforcements to be reliably related. Bandura (1977) added that expectations of competence are also necessary for internal control. The concept of internal control is therefore different from that of self-determination in two important ways. First, as we said earlier, expectations of behavior–outcome dependence and of competence promote intentional behavior, but they do not provide a basis of distinguishing between self-determined and controlled behaviors. Second, because the concept of locus of control was anchored to reinforcements, it failed to consider intrinsically motivated behaviors, which require no reinforcements.

Other work on internal–external control (e.g., Connell, 1985; Lefcourt, 1976) has used the term *perceived control over outcomes* (rather than locus of control of reinforcements). That work has included intrinsically motivated as well as reinforcement-dependent behaviors, but it too does not address whether the initiation and regulation of behavior is self-determined or controlled. Both self-determined and controlled behaviors can involve internal perceived control of outcomes.

The other way in which the internal–external metaphor has been used relates to the initiation and regulation of behavior. DeCharms (1968), elaborating on an earlier discussion by Heider (1958), spoke of an internal or an external *locus of causality* for behavior, pointing out that intrinsically motivated behavior has an internal locus of causality with the concomitant feeling of free choice, whereas extrinsically motivated behavior has an external locus of causality with the concomitant sense of dependence. We (Deci & Ryan, 1985b) have modified the use of the locus of causality distinction to convey one's experience of whether a behavior is self-determined or controlled, namely whether one has a sense of "choice" versus "having to." Thus, the distinction does not strictly parallel the intrinsic–extrinsic distinction, nor does it refer to whether the initiating and regu-

latory factors are inside or outside the person. In motivational terms, factors inside the person are always involved in intentional behavior. However, all intentional behavior can be characterized as varying in the degree of relative autonomy, at one extreme having an external perceived locus of causality and at the other having an internal perceived locus of causality. For us, an internal perceived locus of causality describes the experience of an action's being one's own and being freely undertaken, whereas an external perceived locus of causality describes the experience of having to do something, of being compelled by heteronomous forces. Contextual factors as well as person factors can have either an autonomy-supportive or a controlling functional significance and can therefore promote either an internal or an external perceived locus of causality.

Weiner (1986, p. 46) has used the concepts internal–external control and internal–external causality interchangeably to refer to whether people attribute the cause of (i.e., the control over) outcomes such as successes or failures to factors such as effort that are inside the person (internal) or to factors such as luck that are outside the person (external). Therefore, Weiner's use of the locus of causality concept relates to the attributed causes of outcomes rather than to the experienced source of initiation and regulation of behavior, and it equates internal versus external causality with factors inside versus outside the person. Thus, his usage is consistent with the way the concept of internal–external control has traditionally been used, but it is inconsistent with our use of the concept of internal–external causality.

A straightforward and important implication of this discussion concerns what is typically referred to as the psychology of self-control (e.g., Bandura, 1977; Kanfer, 1975). A person can evidence self-control either through rigid, self-punitive methods or through more integrated, flexible methods. The former is herein categorized as internally controlling regulation and is exemplified by processes of introjection and ego involvement (Ryan, 1982; Ryan, Connell, & Deci, 1985). The latter, more autonomous self-control can be described in terms of identification and integration of values and behavioral regulations. The clinical importance of this qualitative distinction has been treated elsewhere (Deci & Ryan, 1985b).

Concluding Comments

In this article we have considered the implications of people's capacity to be autonomous and their vulnerability to being controlled. We have suggested that intentional behavior can be regulated in two qualitatively different ways: It can be flexibly and choicefully self-regulated or it can be controlled. Autonomous regulation is facilitated when events and contexts have an autonomy-supportive functional significance, and controlled regulation is promoted when events and contexts have a controlling functional significance.

When considered in terms of social psychology, the autonomy–control distinction is especially important in interpersonal situations involving power differentials: situations such as those of parent–child, teacher–student, manager–subordinate, or therapist–patient. Whether the basis of power (French & Raven, 1959) is rewards, force, position, expertise, or charisma, the person who is one down is particularly vulnerable to being controlled. An understanding of the autonomy–control issue

can therefore clarify how authority relationships influence individuals' behavior, development, and experience. When considered in terms of personality psychology, the autonomy–control distinction is also very important for understanding behavior, development, and experience. It helps to clarify individual differences in selecting and responding to social situations, and it adds a qualitative dimension to the psychology of self-control.

The general framework offered herein thus highlights some ways in which the enigma of human choice and autonomy can be explored empirically to help explicate the dynamic interaction between persons and contexts.

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