Intrinsic and Extrinsic Motivation

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Abstract

Psychologists have posited two types of motivation theories. Dualistic theories divide motivation into two types: intrinsic and extrinsic. Multifaceted theories, in contrast, recognize a number of genetically distinct motives. Intrinsic-extrinsic dualism fails on at least three counts: construct validity, measurement reliability, and experimental control. Many researchers have thus moved beyond the study of intrinsic-extrinsic motivation and validated multifaceted theories. When teaching students about the multifaceted nature of motivation, teachers can take several steps to improve their students' understanding of this understudied area of psychology

Keywords

motivation, intrinsic motivation, needs, 16 basic desires

Psychologists have put forth two kinds of motivation theories: dualism and multifaceted theory (Reiss, 2004a). Dualism divides human motives into two types, for example, mind-body, approach-avoidance, or intrinsic-extrinsic motivation. In contrast, multifaceted theories recognize a number of genetically distinct motives, such as hunger, curiosity, positive self-regard, fear, sex, power, and so on. In this article, I will summarize the main objections against intrinsic-extrinsic dualism and then make the case for multifaceted theory. Some readers may be surprised to learn of the extent of recent progress with multifaceted theory.

Intrinsic-Extrinsic Motivation

Intrinsic motivation is most commonly defined as "doing something for its own sake," as when a child plays baseball for no reason other than because that is what he wants to do. Extrinsic motivation, in contrast, refers to the pursuit of an instrumental goal, as when a child plays baseball in order to please a parent or win a championship. According to Deci and Ryan's (1985) self-determination theory, extrinsic incentives undermine intrinsic interest. Suppose that a boy who loves to play baseball for its own sake is offered money for winning. According to self-determination theory, the extrinsic incentives (e.g., money, victory) undermine the boy's intrinsic enjoyment of baseball. In the future, the boy is likely to play baseball less in the absence of extrinsic incentive. In the paragraphs below, I will evaluate intrinsic-extrinsic dualism against the scientific criteria of construct validity, measurement reliability, experimentally controlled studies, and the elimination of plausible alternative explanations (see Reiss, 2005).

Construct Validity

The distinction between intrinsic and extrinsic motivation implies that many (if not all) important human motives can be divided into two kinds, often called Hull's drives (extrinsic motivation) and nondrives (intrinsic motivation). Extrinsic motivation entails the Hull-Spence drives of hunger, thirst, sex, and pain/anxiety avoidance. In contrast, nonsurvival needs, or so-called ego motives such as curiosity, competence, autonomy, and play, comprise intrinsic motivation.

The distinction between intrinsic and extrinsic motivation is invalid, however, because motives cannot be divided into just two categories. Reiss and Havercamp (1998) and Jackson (1984), for example, repeatedly demonstrated a multifaceted solution to human needs. Human motives are too diverse to fall into just two categories.

Why, then, have so many psychologists embraced the distinction of intrinsic-extrinsic motivation in the absence of direct evidence of construct validity? Its appeal, I think, arises from its similarities with mind-body dualism, or the perception that mental events seem to be fundamentally different from physical events. Although Plato's body decayed when he died, the idea of the person of Plato is still with us. Mind-body dualism was an effort to explain why the body, but not ideas, decay and perish with time.

Intrinsic-extrinsic motivation is a modern form of dualism in which many psychologists associate survival needs with

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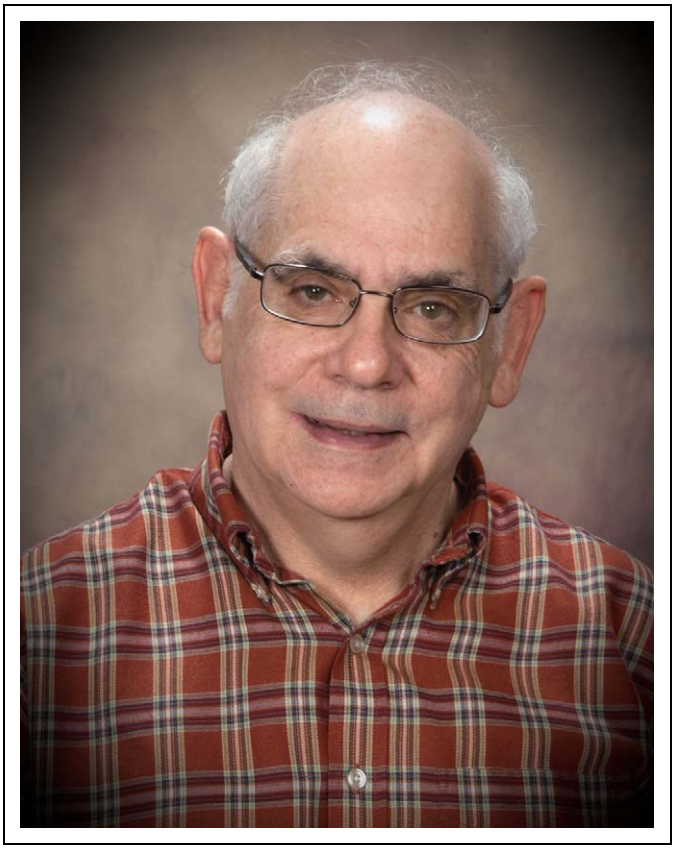

Figure 1. Steven Reiss

extrinsic motives and psychological needs with intrinsic motives. In his book *Intrinsic Motivation*, Deci (1975) wrote that extrinsic motives arise from "tissue needs" (i.e., the body), whereas intrinsic motives arise from the central nervous system (which gives rise to consciousness, or the "mind"). The same motives that ancient Greek philosophers attributed to the body, Deci attributed to tissue needs; the motives ancient Greek philosophers attributed to the mind or soul, Deci attributed to the central nervous system. Thus, intrinsic-extrinsic motivation and mind-body dualism both imply a similar taxonomy of human motives.

Despite their intuitive appeal, mind-body dualism and intrinsic-extrinsic motivation are construct invalid. People inherit numerous genes that give rise to a wide diversity of motives, needs, goals, and reinforcements. These motives do not divide into just two kinds called mental-physical or intrinsic-extrinsic.

In conclusion, ancient Greek philosophers brilliantly sought to explain why material objects (such as human bodies) decay whereas mental objects (such as ideas) endure forever. In the 1970s, social psychologists tried to reestablish dualism in the form of intrinsic and extrinsic motivation. Both mind-body dualism in Greek philosophy and intrinsic-extrinsic motivation in social psychology yield a similar classification of human motives and goals into two types. But both philosophical and psychological dualism are invalid because human motives are genetically multifaceted and do not divide into just two kinds. Rather, all human motivation arises from an intrinsic source. Moreover, extrinsic motivation (a means to an end) arises from the pursuit of the intrinsically valued goal it produces; thus, it is not a separate and distinct category of motivation. When people do X to get Y, Y motivates both itself and X, so that all motivation is derived from Y and not from two sources, X and Y.

Measurement Reliability

In the earliest days of intrinsic-extrinsic motivation research, self-reported liking of the experimental activity was regarded as a valid measure of intrinsic motivation because of its cognitive nature. In other words, intrinsic motivation theorists predicted that extrinsic incentives would lead to research participants saying they liked the activity less than they had before they received the reward. In reality, this does not happen: On the contrary, post-reward research participants usually say they still like the rewarded activity just as they had prior to receiving the reward, or perhaps even more. This should have been the end of intrinsic-extrinsic motivation. It was not.

For reasons I never considered credible, intrinsic motivation theorists decided that the behavioral measures of intrinsic interest were more valid than the cognitive measures (Kohn, 1993). On behavioral measures, some investigators reported an undermining effect of extrinsic incentives on intrinsic interest, whereas others reported no such effect (Eisenberger, Pierce, & Cameron, 1999). In other words, no undermining effect occurs with respect to cognitive measures of intrinsic interest, but researchers have reported an unreliable effect for the behavioral measure.

One possible reason for the unreliable reports of behavioral undermining is that the behavioral measures of intrinsic interest used in these studies were unreliable. What activities a child chooses while running around a nursery school, for example, may vary from day to day, for no particular reason. I do not recall a study demonstrating the test-retest reliability of any of the behavioral measures of intrinsic motivation. I believe that measures of self-reported interest are reliable, so when reviewing the literature on intrinsic-extrinsic motivation, one should focus only on the results with self-report measures, which show no undermining effect, or under certain circumstances, an enhancement effect.

Certain interpretations of behavioral measures have also led to circularity and self-fulfilling prophecy. Suppose we offer a boy a prize for making a good drawing; the boy draws and gets the prize; and then, post-reward, we observe the boy to see if he still draws on his own. If the boy draws little after having earned the prize, undermining theorists interpret this as evidence of decreased intrinsic motivation. But if the boy draws more after having earned the prize, undermining theorists do not interpret this as evidence of increased intrinsic motivation. Rather, when the boy draws more, undermining theorists assume that the child was looking for a reward and, thus, was extrinsically motivated. When the boy draws less, undermining theorists assume that the child could not have been looking for an incentive and, thus, was intrinsically motivated. This "heads

I win, tails you lose'' thinking is circular; it biased the publication process by misidentifying disconfirming studies as invalid. Because reviewers applied this faulty logic during the peer-review process, many studies that did not support undermining theory were never published.

Experimental Controls

The evidence for an unreliable undermining effect on behavioral measures of interest is almost entirely limited to the study of novel rewards. In other words, the participants in studies on intrinsic-extrinsic motivation received only one trial of reward. To draw practical implications, researchers assumed that the effects of novel rewards are equivalent to long-term uses of reward, such as grades in school or pay for industrial workers. But is that assumption true? Are there students who only get one grade in their life? Are there workers who get only one paycheck in their life?

Suppose we were to conduct research on major tranquilizer medications. In an analogous study, we would give participants a single pill and then draw conclusions about the long-term effects of the drug. If we were to operate like that, we would conclude that the long-term use of tranquilizers is safe. We would be mistaken, however, because long-term use can cause tardive dyskinesia, which does not occur with a single use of the medication.

It is invalid to assume that the effects of a single trial of a treatment will hold over the long term. When rewards are especially novel—nearly all of the undermining studies used only one trial of reward—they can be distracting, arouse performance anxiety, or even cause doubt that the experimenter will actually give the reward as promised. Consider, for example, your first paycheck or a child's first report card. The excitement of the ''first'' fades over time. When participants receive a novel reward for performing an activity, the reward can have a minor undermining effect because of distraction. Of course, distraction is less likely as the novelty wears off.

The literature demonstrating an undermining effect of extrinsic reward on intrinsic motivation is almost entirely (95% or more) based on single-trial reward studies in laboratories. Consequently, this literature says little about real-world, long-term rewards such as grades and pay. The undermining studies did not control for the known negative effects of reward.

Practical Implications

In schools, a dualistic approach to discussing intrinsic and extrinsic motivation has encouraged a type of ''learned helplessness''; teachers and psychologists assume they cannot do much to motivate students to learn because the ''intrinsic motivation has been beaten out of them.'' Intrinsic-extrinsic motivation provides a conceptual system that offers general advice to classroom teachers (i.e., do not use extrinsic incentives) but offers little help for individuals who are doing poorly.

Multifaceted Theory

William McDougall (1908/2003) observed that:

> Every man is so constituted to seek, to strive for, and to desire certain goals which are common to the species, and the attainment of which goals satisfies and allays the urge or craving or desire that moves us. These goals . . . are not only common to all men, but also . . . [to] their nearer relatives in the animal world, such goals as food, shelter from danger, the company of our fellows, intimacy with the opposite sex, triumph over our opponents, and leadership among our companions. (pp. 406-407)

In the language of learning theory, certain stimuli function as reinforcers for everyone; these stimuli constitute genetically distinct sources of reinforcement that do not divide into a mental versus physical, or intrinsic versus extrinsic, taxonomy. To find out what these universal reinforcers are, Reiss and Havercamp (1998) conducted a series of factor-analytic studies, eventually identifying 16 distinct universal reinforcements. The 16 universal reinforcements (also called 16 human needs) that resulted from the factor-analytic work became the 16 psychometric scales of a standardized assessment tool called the Reiss Motivation Profile (RMP). The 16 scales include:

- acceptance, or the desire for positive self-regard;
- curiosity, the desire for understanding;
- eating, the desire for food;
- family, the desire to raise children and spend time with siblings;
- honor, the desire for upright character;
- idealism, the desire for social justice;
- independence, the desire for self-reliance;
- order, the desire to be organized and clean;
- physical activity, the desire for muscle exercise;
- power, the desire for influence or leadership;
- romance, the desire for beauty and sex;
- saving, the desire to collect;
- social contact, the desire for peer companionship;
- status, the desire for respect based on social standing;
- tranquility, the desire to be free of anxiety and pain; and
- vengeance, the desire to confront those who offend.

As summarized in Chapter 2 of my book, *The Normal Personality* (Reiss, 2008), researchers have validated the 16 universal reinforcements. Confirmatory factor analyses showed construct validity; measurement reliability—test-retest, internal, and interrater—was comparable or superior to reliability measures reported for widely used personality tests, and 15 of the 16 psychometric scales that measure universal reinforcement had good criterion and concurrent validity (Havercamp & Reiss, 2003; Olson & Chapin, 2007; Olson & Weber, 2004).

The RMP is the first empirically derived, standardized assessment of human needs (which are universal reinforcing stimuli). Everybody is motivated by the 16 universal reinforcements but not in the same way. Individuals show reliable individual differences in how they prioritize these 16 universal

reinforcements. These prioritizations have numerous practical implications. What follows is a partial list of the current professional or published applications of the RMP.

Self-discovery. In this application, individuals use the RMP to reflect on how their motives, values, and behavior might be interconnected.

Business coaching. The RMP is used in business coaching or when counseling business executives with job-related problems. In this application, coaches and counselors use the RMP to identify unmet needs at work or possible incompatibilities of goals or values between the executive and the corporate culture or supervision.

Sports coaching and health psychology. Peter Boltersdorf, a German coach, founded a sports institute based on the RMP and now counts among its clients an Olympic gold medalist and two world championship teams. David Laman, who cofounded an organization designed to improve sport and health performance, developed an application for motivating healthy behaviors.

Marriage counseling. Judah (2006) administered the RMP to more than 100 couples who sought marriage counseling and 20 happy couples. Although he did not evaluate the results scientifically, there were large differences in congruence of RMP scores. Couples in the troubled marriages were more likely to hold opposite values and goals than those in the happy marriages.

School psychology. Reiss (2009) adapted the RMP to assess six common motivational reasons for poor school achievement—inadequate ambition, fear of failure, inadequate curiosity, disorganized, irresponsible, and combative—each of which requires a different intervention. Counselors and psychologists working at about 40 schools nationwide and elsewhere are exploring this approach.

Spirituality and religion. Reiss (2004b) suggested a new theory of spirituality and religion based on the construct of motivational priority. The attributes of the Judeo-Christian image of God represent the greatest imaginable expression of 11 of the 16 universal reinforcements. Creator, for example, is the greatest imaginable expression of achievement/power, whereas omniscient is the great imaginable expression of curiosity. Future researchers need to test this theory and possibly apply it to faith-based counseling.

Developmental disabilities. Reiss (2010) applied human needs theory to planning futures and crisis intervention with people developmental disabilities.

Teaching Multifacted Theory

When teaching students about the multifaceted nature of motivation, there are several ways to improve their understanding of this understudied area of psychology. First, try to stimulate discussion on the universal motives of human nature. Second, teachers might wish to make a list of motives and then ask students to rank the importance of the difference motives. Doing this tends to show the extraordinary individuality of how people prioritize motives. Which students are impressed with money (or status)? Which are motivated to raise a family? Who is motivated to understand and learn? After students have discussed how their motives differ, have them look at the first list again and discuss whether the information contained in the list could possibly be captured by dualism, which only has two categories or kinds of motives. Dualism does not state what moves us; it does not show how we differ as individuals.

Teachers can also discuss the negative effects of rewards by asking their students to list any negative feelings they have when they are performing for a price or reward. Students sometimes list such feelings as distraction, performance anxiety, and frustrative delay. Teachers can then ask their students whether striving for the rewards makes them like the activities any less. Some additional questions that teachers might wish to ask include:

1. Deep down, what do people really want? What are the stimuli that seem to motivate most people? What do you want? Family? Career success? Wealth? Something else?
2. Can the wants of humankind be reduced to just two categories (mind-body, pleasure-pain, intrinsic-extrinsic), or might we be genetically programmed to seek multifaceted goals?
3. Reiss's multifaceted theory says we are all motivated by the same reinforcing stimuli, but not in the same way. How might different individuals be motivated by money, social life, and fame?
4. Intrinsic-extrinsic motivation has focused attention on the possible misuse or side effects of rewards. What are some of these side effects? When you compete for grades or work for money, for example, are there any negative aspects to the effort to obtain reward?

Conclusion

Intrinsic-extrinsic motivation in social psychology fails each of three essential scientific criteria. First, the distinction between intrinsic and extrinsic motivation is construct invalid because universal human motives are multifaceted (genetically diverse) and do not divide into just two kinds. Second, the cognitive and behavioral measures of intrinsic motivation often yield different or even opposite results (Eisenberger et al., 1999). Cognitive measures show mostly enhancement effects or no effect of rewards on intrinsic motivation. Behavioral measures require a subjective judgment of what research participants expect; these measures may thus be unreliable. Third, nearly

every experiment on intrinsic and extrinsic motivation failed to control for reward novelty effects, even though there is replicated evidence that distraction undermines intrinsic motivation. Consequently, virtually every demonstration of reward undermining intrinsic motivation can be reinterpreted as evidence that people do not enjoy activities when they are distracted. Finally, researchers have moved beyond the study of intrinsic-extrinsic motivation. Researchers have validated and applied 16 universal reinforcements to a wide range of phenomena including school motivation, business coaching, and relationships.

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