Back to the Future Part 4: Motivation for the Future[1]

Amanda Martin
Robert Morris University

The present study examined the effects of motivation-type (intrinsic and extrinsic) and self-continuity (current-self and future-self) on intent to study. Based on these variables, four requests for attendance (scripts) to an evening study session were crafted. Two that emphasized intrinsic motivation (learn and apply course content) and two that emphasized extrinsic motivation (better grades and food provided). Within each of these, two script variations were created that either emphasized benefits relevant to the current-self (better prepared for the test) or to the future-self (your future-self is counting on what you do today). Scripts were equated on number of words and number of sentences. Results showed only significant main effects of both motivation-type and self-continuity (no interaction). Extrinsic motivation produced greater intent than intrinsic motivation, and future-self produced greater intent than current-self. Recommendations for practical applications of these findings are provided. In addition, implications of these findings to the literature are discussed.

Introduction

Motivation is the force that drives people to achieve their goals. Motivation is of particular importance in academic settings because students who have a greater level of motivation will have an increased level of initiative, increased effort studying, and improved performance in the classroom (Ormrod, 1998). Two methods by which motivation may be increased is either extrinsically or intrinsically. The distinction between the two types of motivation was first made in the 1950's (Berlyne, 1955, 1957; Koch, 1956; White, 1959). Extrinsic motivation results when incentives come from outside an individual. For example, studying for an exam to receive praise or a good grade reflects extrinsic motivation. Intrinsic motivation occurs when incentives come from internal desires. Studying to satisfy an interest or because learning gives a feeling of accomplishment are examples of intrinsic motivation. With extrinsic incentives, there is a level of instant gratification derived from rewards while there is personal satisfaction and longevity of behaviors with intrinsic incentives (Buckworth, Lee, Regan, Schneider, & DiClemente, 2007).

The education system extrinsically rewards students with grades, scholarships, and praise because the short term effects of using extrinsic motivation are positive and can be implemented without knowing a great deal about the individual student. Extrinsic incentives make people begin to change their behaviors (Brophy 1998; Buckworth, Lee, Regan, Schneider, & DiClemente, 2007; Jensen 1998; Kohn, 1993, 1996). Extrinsic incentives work on students because they want the reward. Becoming intrinsically motivated will make students less reliant on extrinsic results (Dweck, 1999; Glasser, 1986). Intrinsic motivation is also a benefit because extrinsic incentives can become costly for schools and professors to provide.

The majority of the research about extrinsic and intrinsic motivation either combine the two variables (deCharms, 1984; Deci, 1992; Lepper & Henderlong, 2000) or examine long-term effects of extrinsic incentives on intrinsic incentives (Cameron & Pierce, 1994, 1996; Deci, 1971; Sansone & Harackiewicz, 2000). Lepper, Corpus, and Iyengar (2005) examined intrinsic and extrinsic conditions as they apply to academic achievement. An in depth review of their work will more clearly illustrate the typical findings regarding intrinsic and extrinsic motivation.

Lepper et al. (2005) examined intrinsic and extrinsic motivation separately to better understand their relationship with academic outcomes, year in school, and social desirability. There were 797 participants from two public school districts in California who took part in this study. The researchers used the concept from Harter's (1980) scale to examine intrinsic and extrinsic motivation separately. The students were given a modified

version of the survey in which they were able to choose a combination of extrinsic and intrinsic motivation. The survey contained questions about students and their performance on a classroom task and if it was more similar to the description of intrinsic motivation, extrinsic motivation, or a combination. The students were also given the Children's Social Desirability Scale, which is a separate survey to assess social desirability. One year after the study was conducted, each student's academic achievements were evaluated by examining their GPA or standardized test scores.

Lepper et al. (2005) found that when intrinsic and extrinsic motivation were measured separately, although they were correlated, the two did not represent opposite ends of a motivation continuum. Intrinsic and extrinsic motivation are only moderately negatively correlated. This outcome shows that the two variables can be properly used separately and may be viewed as different variables instead of being independent. The study also showed that while intrinsic motivation decreased with each year in school, extrinsic motivation remained constant.

Academic achievement was shown to be positively correlated with intrinsic motivation and negatively correlated with extrinsic motivation. This happens because intrinsic motivation is most beneficial in the long term, while extrinsic motivation is most beneficial in the short term. Social desirability was shown to be positively correlated with intrinsic motivation and negatively correlated with extrinsic motivation. Social desirability is positively correlated with intrinsic motivation because people are internally motivated by the need for approval from others.

Social desirability is the need for people to portray themselves as thinking and acting in ways that are socially accepted. Social desirability is the awareness people have of a perspective outside themselves or beyond their own perspective (Glasser, 1980). This is similar to the perspective of the self in the future.

A recent contribution to the literature about motivation is the idea of perspective taken when considering whether to engage in a behavior or not. A perspective of the self in time is called self-continuity (Dunkel, 2005; Dunkel, Minor, & Babineau, 2010; Sadeh & Karniol, 2012). Self-continuity is a working concept of who a person is,

was, and may become. The two perspectives factor together to define the ideas of a current-self and a future-self. People may focus on the benefit they will receive for their current-self or they could focus on the benefits from the perspective of their future-self.

As an example, assume that both John and Mary are students. John's current-self is his perception of himself at the present moment. The way John sees himself now is his current-self. Mary's future-self is the perception of who she may become as a result of her actions now. Her future-self will be a direct reflection of any and all choices, decisions, or actions that she undertakes between now and that point in the future. Mary's perspective of her future-self may not be the same as other people's perceptions of their future-self (Bryan & Hershfield, 2012; Hershfield et al., 2011).

The idea of how individuals view their future-selves can have a considerable impact on their current decision making processes (Bryan & Hershfield, 2012; Hershfield et al., 2011). A person who can clearly imagine the future-self feels a stronger connection and can identify more with that future-self (Hershfield et al., 2011; Nenkov, Inman, & Hulland, 2008; Parfit, 1987). Clarity helps people to realize that the future-self is dependent on the choices that are made now (Loewenstein, 1996; Parfit, 1987; Schelling, 1984).

Another way to encourage a person to look out for the future-self is to target the sense of social responsibility. A person naturally feels socially responsible to help his or her future-self (Berkowitz & Daniels, 1963; Bryan & Hershfield, 2012; Hershfield et al., 2011; Schwartz, 1970). If a person realizes that the future-self is clearly dependent on decisions made now then beneficial decisions become more likely (Bryan & Hershfield, 2012; Hershfield et al., 2011).

Applications of self-continuity have not been well researched in education. Primarily, studies of self-continuity have focused on saving money for retirement (Bryan & Hershfield, 2012; Deci, 1992; Hershfield et al., 2011). The researchers created virtual reality avatars of the participants using photographs that were taken two weeks earlier. The researchers either created a non-aged avatar or an aged avatar of each participant. The non-aged avatars represented the current-self while the aged

avatar represented the future-self. The avatars were created to interact with the participants during a money allocation task. The participants were individually asked to imagine they had just been given $1,000 and were to allocate how the money was used. The researchers hypothesized that the participants who interacted with their future-self avatars would allocate more money toward their hypothetical retirement savings account then participants who interacted with their current-self avatars. Fifty participants were randomly assigned to one of the conditions and then put into a virtual reality environment to interact with either the current-self avatar or future-self avatar. The participant interacted with the avatar, which asked each participant a series of scripted interview questions.

As predicted the participants who interacted with the future-self avatars allocated over twice as much money to their retirement accounts than participants who interacted with the current-self avatars. This research proved that if people can clearly identify with their future-selves then they will be more likely to consider their future-selves when making decisions in the present time.

A majority of research on self-continuity deals with issues outside the academic context, such as saving money (Bryan & Hershfield, 2013; Hershfield et al., 2011), awareness and clarity (Skene, 1996), and coping mechanism (Hammell, 2007; Havasy, 1989; Sadeh & Karniol, 2012; Westra, 1991). The present study is an important addition to the literature because it has to do with self-continuity in education. Specifically, the present study examined self-continuity and incentives on students' willingness to attend a study session.

It was predicted that the combination of extrinsic and future-self will yield the greatest willingness to attend the study session, based on research showing that both extrinsic incentives (Dweck, 1999; Glasser, 1986) and future-self are strong motivators (Bryan & Hershfield, 2012, 2013; Deci, 1992; Hershfield et al., 2011). What is not certain is the degree to which incentives and perspective contribute to motivation to attend a study session.

Method

Participants

Two hundred and ninety-three young adults (186 men, 107 women, m = 19.5 years, range= 16–41 years) enrolled in an undergraduate Introduction to Psychology course at Robert Morris University in Pennsylvania. The students in each of the four classes volunteered for the study and did not receive extra credit for their participation.

Design

The present study involved a 2x2 design in which Motivation (extrinsic and intrinsic) and Self-continuity (current-self and future-self) were manipulated between subjects. The dependent variable, willingness to attend a study session was assessed using an eleven question survey (see appendix for a copy of survey). In particular, the item of interest was "if you had time to do so, how willing would you be to attend a study session for this class", which was scored on a seven point Likert-scale (1= definitely not attend, 7= definitely would attend). After being exposed to the script, students were given a survey.

In the present study, students' willingness to attend a study session was assessed using an eleven question survey, which consisted of demographic questions, Likert-scale questions, and ranking questions. The demographic questions included gender, age, year in college, and current GPA. Additional questions elicited the number of hours per week students spent studying and the hours spent having fun. Seven point Likert-scale questions (1= strongly disagree, 7=strongly agree) were included to assess how willing students were to attend a study session; if students were more concerned about getting good grades than learning the material; whether students motivate themselves or are motivated by others; and how much free time is spent studying for the class. The last question asked the students to rank what motivates them to study: interest in topic or to increase knowledge on the topic; to be able to apply learned material outside of class; make more money after graduation; meet the expectations of others; fear of failure or just wanting to pass the class; or need for achievement. A seventh ranking option was given

to allow the students to explain what motivates them.

Materials & Procedure

The researcher presented participants with an oral description of the benefits of a study session to prepare for an upcoming midterm exam. The students were presented with one of four descriptions of the session which were used to elicit a combination of Motivation (extrinsic or intrinsic) and Self-continuity (current-self or future-self). After each presentation to the students, they were given the survey to complete, which took approximately five minutes.

To create the extrinsic conditions, the following script was read to the students:

This study session will help to improve your grades and there will be snacks provided for you while you study. Obviously, it will be nice to have some tasty snacks at the study session where we can work to improve your grades. Because you have studied for the test, you got a good grade in this class.

To create the intrinsic conditions, the following script was read to the students:

This study session will give you a better understanding of the material and help increase your interest in psychology. A greater interest in psychology will have the effect of increasing your understanding of the material presented in class and in the text. Because you have studied for the test, you learned about psychology and can apply that knowledge.

To create the current-self conditions, the following script was read to the students:

The goal of this study session is to provide you with training in psychology so you can perceive the benefits right away. You will see immediate outcomes from the work that you put in for this class. For a moment, imagine that you go to the study session. Going to this session will better prepare you for the test.

To create the future-self conditions, the following script was read to the students:

At the end of the semester, you won't have any more chances to affect your situation. By then, it will be too late. So your future you is counting on you to study for your psychology test. For a moment, imagine yourself at the end of the semester. Your future-self was counting on you and you did it.

The students were exposed to one of the script combinations: extrinsic and current-self, intrinsic and current-self, extrinsic and future-self, or intrinsic and future-self.

Results

A 2 (Motivation: intrinsic and extrinsic) x 2 (Self-continuity: current-self and future-self) between subjects analysis of variance (ANOVA) was performed on self-reported willingness to attend a study session. The analysis revealed a significant main effect of Motivation, $F(1,292) = 18.57$, $p < 0.005$, in which willingness was greater for extrinsic (M= 4.65, SD= 1.59) than intrinsic motivation (M= 4.24, SD= 1.57).

It was found that there was also a significant main effect of Self-continuity perspective, $F(1,292) = 5.32$, $p < 0.05$, in which willingness to study was greater for future-self (M= 4.85, SD= 1.45) than current-self (M= 4.07, SD= 1.63).

There was no significant interaction, $p > .05$.

Discussion

As expected, based on the findings of Bryan and Hershfield (2012, 2013), Dweck (1999), Glasser (1986), and Hershfield et al. (2011), the current study revealed that motivation and self-continuity affected willingness to attend a study session. Extrinsic incentives increased willingness to attend a study session relative to intrinsic incentives. Extrinsic motivators were more effective in a short term situation, which is a common finding, as shown by Dweck (1999) and Glasser (1986).

As a short term study, the students were asked their willingness to attend a one-time study session, which is why extrinsic rewards, such as the possibility of a better grade in the course and the promise of food, had more effect than intrinsic incentives. Extrinsic incentives have a greater short term effect than intrinsic incentives (Dweck, 1999; Glasser, 1986). It is predicted that in a long term situation, the results would show that intrinsic incentives are a stronger motivator than extrinsic incentives.

Future-self was greater than current-self at increasing students' willingness to attend a study session. The future-self caused students to be more willing to attend a study session than current-self. The students were asked to clearly imagine their future-selves and the connection between themselves and their future-selves. The task to vividly imagine their future-selves made them relate to that perspective and become more conscious of the choices they made now because it would affect their future-selves.

While there have been countless studies done on extrinsic and intrinsic motivation in relation to education, the researcher was not able to find any studies that examine self-continuity in relation to education. The finding that future-self increases willingness to attend a study session more than current-self could open the door for more detailed research. This could show educators that instead of, or in addition to, extrinsically rewarding students, the teachers could tap into students' future-selves to motivate them.

An important follow up to the present study would be to assess actual attendance to the study session. In the current study, only intent was measured. As shown by Godin, Connor, and Sheeran (2005) and Rhodes (2013), there is a gap between intention and action. Future research should be done to see the effects of motivation and self-continuity on the attendance of study sessions. It is left to future research to determine if a long-term study will show that intrinsic motivators could outweigh extrinsic motivators. Testing how future-self and current-self will affect participants' actual attendance of the study session will be a valuable addition to the literature. No current research has been found that shows the extent to which the self-continuity variable might persist over longer periods of time.

Future research performed on students in upper level courses would also be beneficial. The present study used an introductory course which consisted of mostly freshmen and sophomore students. It would be informative to extend these procedures to more advanced, and presumably more motivated levels. Students who are taking a course relevant to their major are focused on mastery-approach goals rather than performance-approach goals (Elliot & Church, 1997; Harackiewicz, Barron, Tauer, Carter, & Elliot, 2000), which could make students in a major class more likely to attend the study session.

References

Allan, B. M., & Fryer, R. G. (2011). The power and pitfalls of education incentives. From: http://scholar.harvard.edu/files/fryer/files/0920 11_incentives_fryer_allen_paper2.pdf.

Berkowitz, L., & Daniels, L. R. (1963). Responsibility and dependency. *The Journal of Abnormal and Social Psychology, 66*(5), 429-436.

Berlyne, D. E. (1955). The arousal and satiation of perceptual curiosity in the rat. *Journal of Comparative and Physiological Psychology, 48*(4), 238-246.

Berlyne, D. E. (1957). Conflict and information-theory variables as determinants of human perceptual curiosity. *Journal of Experimental Psychology, 53*(6), 399-404.

Brophy, J. E. (2004). *Motivating students to learn*. (2nd ed.). Mahwah, NJ: Lawrence Erlbaum Associates.

Bryan, C. J., & Hershfield, H. E. (2012). You owe it to yourself: Boosting retirement saving with a responsibility-based appeal. *Journal of Experimental Psychology: General, 141*(3), 429-432.

Bryan, C. J., & Hershfield, H. E. (2013). You owe it to yourself: Boosting retirement saving with a responsibility-based appeal. *Decision, 1*(S), 2-7.

Buckworth, J., Lee, R., Regan, G., Schneider, L., & Diclemente, C. (2007). Decomposing intrinsic and extrinsic motivation for exercise: Application to stages of motivational readiness. *Psychology of Sport and Exercise, 8*(4), 441-461.

Cameron, J., & Pierce, W. D. (1994). Reinforcement, reward, and intrinsic motivation: A meta-analysis. *Review of Educational Research, 64*(3), 363-423.

Cameron, J., & Pierce, W. D. (1996). The debate about rewards and intrinsic motivation: Protests and Accusations Do Not Alter the Results. *Review of Educational Research, 66*(1), 39-51.

Cook, J. (2003). Motivational strategies: the outcome starts here: motivating through extrinsic and intrinsic rewards. *The American Music Teacher 53*(2), 41-42.

deCharms, R. (1984). Motivation enhancement in educational settings. In R. E. Ames & C. Ames (Eds.), *Research on motivation in education*. Orlando, FL: Academic Press, pp. 275-310.

Deci, E. L. (1971). Effects of externally mediated rewards on intrinsic motivation. *Journal of Personality and Social Psychology, 18*(1), 105-115.

Deci, E. L. (1992). The relation of interest to the motivation of behavior: A self-determination theory perspective. In Renninger, A., Hidi, S., and Krapp, A. (eds.). *The Role of Interest in Learning and Development*, Erlbaum, Hillsdale, NJ, pp. 43-70.

Dunkel, C., Minor, L., & Babineau, M. (2010). The continued assessment of self-continuity and identity. *The journal of genetic psychology, 171*(3), 251-261.

Dunkel, C. S. (2005). The relation between self-continuity and measures of identity. *Identity, 5*(1), 21-34.

Dweck, C. S. (1999). *Self-theories: Their role in motivation, personality and development*. Philadelphia: The Psychology Press.

Elliot, A. J., & Church, M. A. (1997). A hierarchical model of approach and avoidance achievement motivation. *Journal of Personality and Social Psychology, 72*, 218-232.

Glasser, W. (1986). *Control theory in the classroom*. New York: Harper & Row.

Godin, G., Conner, M., & Sheeran, P. (2005). Bridging the intention-behaviour gap: The role of moral norm. *British Journal of Social Psychology, 44*(4), 497-512.

Harter, S. (1980). *Manual for A Scale of intrinsic versus extrinsic orientation in the classroom*. Denver, CO: University of Denver.

Hammell, K. W. (2006). Quality of life after spinal cord injury: A meta-synthesis of qualitative findings. *Spinal Cord, 45*(2), 124-139.

Harackiewicz, J. M., Barron, K. E., Tauer, J. M., Carter, S. M., & Elliot, A. J. (2000). Short-term and long-term consequences of achievement goals: Predicting interest and performance over time. *Journal of Educational Psychology, 92*(2), 316-330.

Harter, S. (1981). A new self-report scale of intrinsic versus extrinsic orientation in the classroom: Motivational and informational components. *Developmental Psychology, 17*(3), 300-312.

Havasy, S. K. (1989). *Temporal dimensions and the maintenance of self-continuity in men adjusting to retirement*. Northwestern University: UMI Dissertations Publishing, p. 86- 86.

Hershfield, H. E., Goldstein, D. G., Sharpe, W. F., Fox, J., Yeykelis, L., Carstensen, L. L., et al. (2011). Increasing saving behavior through age-progressed renderings of the future self. *Journal of Marketing Research, 48*(SPL), S23-S37.

Jensen, E. (1998). *Teaching with the brain in mind*. Alexandria, Va.: Association for Supervision and Curriculum Development.

Karagiannis, Y., & Konstantinidis, N. (2013). *Intrinsic vs. extrinsic incentives for reform: An informational mechanism of EU Conditionality*. From: http://www.uni-heidelberg.de/md/awi/peio/karagiannis__konstantinidis_21.10.2012.pdf.

Koch, S. (1956). Behavior as "intrinsically" regulated: Work notes towards a pretheory of phenomena called motivational. *Nebraska Symposium on Motivation, 4*, 42-87.

Kohn, A. (1993). *Punished by rewards: the trouble with gold stars, incentive plans, A's, praise, and other bribes*. Boston: Houghton Mifflin Co.

Kohn, A. (1996). *Beyond discipline: from compliance to community*. Alexandria, Va.: ASCD.

Lepper, M. R., Corpus, J. H., & Iyengar, S. S. (2005). Intrinsic and extrinsic motivational orientations in the classroom: Age differences and academic correlates. *Journal of Educational Psychology, 97*(2), 184-196.

Lepper, M. R., & Henderlong, J. (2000). Turning "play" into "work" and "work" into "play": 25 years of research on intrinsic versus extrinsic motivation. In C. Sansone & J. M.

Harackiewicz (Eds.), *Intrinsic and extrinsic motivation: The search for optimal motivation and performance*. San Diego: Academic Press, pp. 257-307.

Loewenstein, G. (1996). Out of control: Visceral influences on behavior. *Organizational Behavior and Human Decision Processes, 65*(3), 272-292.

Nenkov, G., Inman, J., & Hulland, J. (2008). Considering the future: The conceptualization and measurement of elaboration on potential outcomes. *Journal of Consumer Research, 35*(1), 126-141.

Ormrod, J. E. (2000). *Educational psychology: Developing learners*. Upper Saddle River, N.J.: Merrill.

Parfit, D. (1984). Reasons and persons. *Philosophical Books, 25*(4), 220-224.

Rawlings, L. A., (2007). *Extrinsic rewards in schools: A look at practice in elementary school settings*. The University of Utah: UMI Dissertations Publishing.

Renninger, K. A., Hidi, S., & Krapp, A. (1992). *The role of interest in learning and development*. Hillsdale: Erlbaum.

Rhodes, R. E. (2013). Bridging the physical activity intention behaviour gap: contemporary strategies for the clinician. *Applied Physiology, Nutrition, and Metabolism, 1*, 1-3.

Sadeh, N., & Karniol, R. (2012). The sense of self-continuity as a resource in adaptive coping with job loss. *Journal of Vocational Behavior, 80*(1), 93-99.

Sansone, C., & Harackiewicz, J. M. (2000). *Intrinsic and extrinsic motivation: the search for optimal motivation and performance*. San Diego: Academic Press.

Schelling, T. C. (1984). Self-Command in practice, in policy, and in a theory of rational choice. *The American Economic Review, 2*(74), 1-11.

Schwartz, S. H. (1970). Elicitation of moral obligation and self-sacrificing behavior: An experimental study of volunteering to be a bone marrow donor. *Journal of Personality and Social Psychology, 15*(4), 283-293.

Skene, K. M. L. (1996). *Self-awareness in preschool children: The development of temporal self-continuity*. (Order No. MM15913, Dalhousie University, Canada: UMI Dissertations Publishing, p. 98-98.

Westra, B. L. (1991). *Getting back to living life: Older adults' experiences at home after hospitalization*. The University of Wisconsin, Milwaukee: UMI Dissertations Publishing, p. 243.

White, R. W. (1959). Motivation reconsidered: The concept of competence. *Psychological Review, 66*(5), 297-333.

Survey instrument

<u>Directions</u>: **In order for the tutor to best prepare for a study session, please answer the following questions as openly and honestly as you can.**

1. Gender: **Male   Female**
2. Age: _____

3. Year you are expected to graduate: **2018   2017   2016   2015   2014**

4. Current GPA: _____

5. Approximately how many hours per week do you *study* for this class? _____ hours/week

6. Approximately how many hours per week do you spend *having fun*? _____ hours/week

7. If you had time to do so, how willing would you be to attend a study session for this class?

Definitely not attend	Probably not attend	Possibly not attend	May or may not attend	Possibly would attend	Probably would attend	Definitely would attend
1	**2**	**3**	**4**	**5**	**6**	**7**

8. How much do you agree or disagree with the following statement: *"I am more concerned about getting a good grade in this class than learning the material."*

Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree
1	**2**	**3**	**4**	**5**	**6**	**7**

9. How much do you agree or disagree with the following statement: *"For this class, I motivate myself to study more than other people in my life motivate me to study."*

Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree
1	**2**	**3**	**4**	**5**	**6**	**7**

10. How much of your free time is spent studying (or doing homework, etc.) for this class?

No free time at all	Little, if any, free time	A small amount	Half	A large amount	Most of my free time	All of my free time
1	**2**	**3**	**4**	**5**	**6**	**7**

11. Rank the following statements from 1-7 where 1 = most important and 7 = least important.
    What motivates you to study?
    _____ Interest in topic or to increase my knowledge on the topic
    _____ To be able to apply what I learn to things outside of class
    _____ Make more money after graduation
    _____ Meet the expectations of others (friends, coaches, parents would be let down)
    _____ Fear of failure or just wanting to pass the class so I don't have to take it again
    _____ Need for achievement or getting good grades
    _____ Other. Please describe _____