

Multiple types of motives don't multiply the motivation of West Point cadets

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Although people often assume that multiple motives for doing something will be more powerful and effective than a single motive, research suggests that different types of motives for the same action sometimes compete. More specifically, research suggests that instrumental motives, which are extrinsic to the activities at hand, can weaken internal motives, which are intrinsic to the activities at hand. We tested whether holding both instrumental and internal motives yields negative outcomes in a field context in which various motives occur naturally and long-term educational and career outcomes are at stake. We assessed the impact of the motives of over 10,000 West Point cadets over the period of a decade on whether they would become commissioned officers, extend their officer service beyond the minimum required period, and be selected for early career promotions. For each outcome, motivation internal to military service itself predicted positive outcomes; a relationship that was negatively affected when instrumental motives were also in evidence. These results suggest that holding multiple motives damages persistence and performance in educational and occupational contexts over long periods of time.

crowding out | overjustification effect

Philosophers and psychologists have long distinguished among various types of motives to engage in particular activities. Some motives are internal or intrinsic to the activities themselves. The artist is motivated to create a great painting. The scientist is motivated to produce a major discovery. The gardener is motivated to grow a bountiful garden. In each case, the desired consequence matters; the artist, the scientist, and the gardener are not just dabbling. In each case, the activities leading to that consequence may involve hardship and struggle. And in each case, the desired outcome is intimately, intrinsically connected to the activity itself. The artist will not hire someone else to make the painting, nor will the gardener hire someone else to create a beautiful garden. In contrast to these kinds of internal motives, people are often guided by what might be called instrumental motives, where the relation between the motive and the activity is largely arbitrary (i.e., the motive bears no intrinsic relation to the activity itself). The scientist may want to earn a good salary, to get promoted, and to win awards. Whereas there are many paths to high salaries, promotions, and recognition, there is only one path to scientific discovery—doing science.

Researchers have studied the relation between what we are calling “internal” and “instrumental” motives for more than 40 y. Typically, past research has designated these different types of motives as “intrinsic” and “extrinsic” (1). However, there is an ambiguity to the terms “intrinsic” and “extrinsic” in that they might refer to the actor (e.g., “he is intrinsically motivated”) or to the task (e.g., “drawing is an intrinsically motivated activity”). In addition, the term “intrinsic motivation” often conveys the idea that the activity in question is pleasant or fun (2). We prefer the terms “internal” and “instrumental” to make clearer that the relation being described is between the activity (not the person) and the motive, and also to make clear that internally motivated

activities need not be undertaken for the inherent pleasure they bring (2, 3).

What happens to the performance of demanding, effortful activities when internal and instrumental motives are combined? Logic would suggest that if you have one reason for doing something, having two or more reasons to do the same thing would be even better, rendering motivation more tenacious, follow-through stronger, and outcomes better. Schools and workplaces are full of systems that attempt to tap people's internal motives to act (e.g., because engaging in the activity is the moral, interesting, or meaningful thing to do), while also providing rewards intended to spark instrumental motives to pursue the same acts (e.g., grades, bonuses, promotions, and so forth). Tapping internal motives and the instrumental motives assumed to result from rewards seems to be a foolproof way to engage the full spectrum of motivational levers that lead people to act. However, in a direct challenge to this assumption, social science research suggests that far from boosting motivation, holding instrumental motives can undermine whatever internal motives may have been operating, leading to drops in overall motivation, persistence, and performance (4–6). In short, this work suggests that salient instrumental incentives trigger instrumental motives, acting to undermine motivation that would otherwise be based in the value and reward of doing the activity or engaging in the act for the sake of objectives that are intimately connected to the act itself. This effect, labeled the “motivational crowding out effect” by economists (7) and the “overjustification effect” by psychologists (6), has been demonstrated across a range of experimental contexts (4). In the present study, rather than focusing on the impact of rewards on motives, we assess motives that already

Significance

Virtually any sustained, effortful activity can be motivated by factors internal to the activity (e.g., scientists pursuing discoveries) or instrumental to it (e.g., scientists pursuing promotions or status). Research in economics and psychology suggests that instrumental motives (often called “extrinsic motives”) undermine the positive impact of internal motives (often called “intrinsic motives”). However, despite 40 y of research, mostly using laboratory-based manipulations, the effect of instrumental motives on the impact of internal motives remains controversial, and naturalistic, long-term tests of its existence are lacking. We show that holding both internal and instrumental motives for attending West Point harms outcomes associated with persistence and performance quality in a sample of over 10,000 cadets over periods spanning up to 14 y.

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exist to understand their interactive effects on a series of long-term outcomes.

The general structure of this body of research consists of laboratory and field experiments in which internal motivation is either established or assumed, followed by the introduction of instrumental rewards or inducements to an experimental group, and the comparison of outcomes of this group and a control group. The robustness of this effect has been generally accepted [but is still the subject of debate (6, 8, 9)]; indeed, recent research has found a possible neural basis for the “undermining effect” of instrumental rewards on internal motivation (10).

Although it is possible to demonstrate the negative impact of instrumental rewards on activity-specific motivation, existing research typically introduces instrumental rewards as exogenous “shocks” to the system. However, in the real world, rather than suddenly being presented with rewards for actions in which they were already engaging, individuals carry an assortment of motives into any course of action they pursue: a mixture of activity-specific and instrumental motives in various combinations and at varying strengths (11). Whereas the typical experimental paradigm has demonstrated the relationship between internal and instrumental motivation in controlled settings through the introduction of

instrumental rewards, longitudinal field research on the relative and interactive impact of various kinds and levels of motives on meaningful outcomes over time has been relatively lacking. Furthermore, examining the impact of the set and strength of motives that propel people to launch a course of action—joining the military, entering a university, becoming a volunteer—on the outcomes they later experience provides a test of naturally co-occurring motives on behavior. Additionally, as we will demonstrate, tests of the impact of different kinds of motives on outcomes occurring in real-world contexts need not depend on the introduction and withdrawal of instrumental rewards (as in experimental studies), but instead on the measurement of the strength of various kinds of motives that launched the course of action from the start.

Prior work, mostly led by Deci and Ryan (2, 3), has demonstrated the ample benefits of intrinsic motivation or, at the very least, extrinsic motivation that has been internalized (what they call “autonomous motivation” in contrast to “controlled motivation,” which reflects compliance with others’ desires or external regulations), for well-being and a host of outcomes in education and health contexts. This research has treated motivation as a property of self-determination and has had a powerful impact on

Table 1. Regression results for making commission, exiting military, and being considered for early promotion

Attributes	Made commission*		Exit from military [†]		Considered for early promotion [‡]	
	Standardized β	<i>P</i> value	Standardized β	<i>P</i> value	Standardized β	<i>P</i> value
F1-Family influence factor score	−0.02	0.77	−0.008	0.68	−0.01	0.76
F2-Financial need factor score	0.03	0.54	−0.05	0.01	0.09	<0.0001
F3-Instrumental motive factor score	−0.07	0.32	0.16	0.0003	−0.27	<0.0001
F4-Internal motive factor score	0.22	<0.0001	−0.12	0.0009	0.20	0.0006
F5-Professional advice factor score	−0.12	<0.0001	−0.02	0.12	0.06	0.01
F6-Self-development factor score	0.06	0.20	−0.04	0.06	0.06	0.09
F1 × F4	0.06	0.03	−0.04	0.04	0.07	0.02
F2 × F4	0.01	0.44	−0.01	0.41	0.006	0.88
F3 × F4	−0.07	0.0006	−0.03	0.01	0.06	0.04
F5 × F4	0.03	0.16	0.03	0.08	−0.07	0.004
Year of class		<0.0001		<0.0001		<0.0001
Class of 1997	0.27	<0.0001	0.49	<0.0001	−0.002	0.87
Class of 1998	0.37	<0.0001	0.56	<0.0001	−0.19	<0.0001
Class of 1999	0.37	<0.0001	0.62	<0.0001	−0.23	<0.0001
Class of 2000	0.49	<0.0001	0.74	<0.0001	−0.35	<0.0001
Class of 2001	0.34	<0.0001	0.72	<0.0001	−0.15	<0.0001
Class of 2002	0.28	<0.0001	1.13	<0.0001	−0.31	<0.0001
Class of 2004	0.15	<0.0001	0.52	<0.0001	Ref	
Class of 2005	0.14	<0.0001	0.34	<0.0001		
Class of 2006	Ref		Ref			
Retention				<0.0001		
First year after 5-y commitment			Ref			
Second year after 5-y commitment			−0.02	0.92		
Third year after 5-y commitment			−0.71	<0.0001		
Fourth year after 5-y commitment			−0.71	<0.0001		
Fifth year after 5-y commitment			−1.1	<0.0001		
Sixth year after 5-y commitment			−0.05	0.96		

Ref refers to this group or category being used as the comparison group in analyses that employ dummy variables.

* $n = 10,239$. Total $n = 11,320$ dropped to 10,239 when we dropped the Class of 2003 because that survey used response categories that did not align with the items pertaining to cadets’ reasons for attending West Point. The data for these items were markedly different from every other cohort surveyed and thus not usable. Analysis controlled for sex, age, race, high-school grade average, SAT score, parental income, and religion. With the exception of age and race, all control variables were significant predictors of commission.

[†] $n = 7,663$. Survival analysis controlled for sex, age, race, high-school grade average, SAT score, parental income, and religion. Analysis reflects a log-log transformation on the probability that the cadet will leave the military following the end of the mandatory service commitment. Table entries should be interpreted as reflecting a linear model; positive coefficients reflect a positive effect on leaving the military. With the exception of race and high-school grade average, all control variables were significant predictors of commission.

[‡] $n = 6,162$. Data not yet available for classes of 2005 and 2006. Analysis controlled for sex, age, race, high-school grade average, SAT score, parental income, and religion. With the exception of race, high-school grade average, and SAT score, all control variables were significant predictors of commission.

how social scientists understand and study motivation in a variety of contexts. However, in three important ways, our work takes a different approach to the impact of motives on outcomes, one that complements Deci and Ryan's seminal research. First, although their approach to motivation considers whether motivation is intrinsic or extrinsic to the self (e.g., "I'm doing this because it's natural to me" vs. "because I'll feel badly if I don't/others will criticize me if I don't") (3), our focus is on whether the motives people hold are internal or external to the activity (e.g., the scientist who pursues science to produce a discovery vs. to earn a salary or win awards). This distinction matters, because the theory of motivation presented by Deci and Ryan concerns identity, or how much of one's motivation emanates from one's psychological needs and sense of self (1) as opposed to other forces.

Second, Deci and Ryan reserve "intrinsic" motivation as a label for only those activities that are undertaken for the inherent satisfaction they bring to the self, free from influence of what one's parents, teachers, managers, or others think should be done or what one feels one should do (what they call "controlled motivation"), even if those reasons become somewhat or fully internalized (what they call "autonomous motivation"). Although this disqualifies most activities from ever being truly intrinsically motivated, "internal" motivation represents a broader category, one that we use here. It focuses on the relation between the outcomes pursued and the activity itself, rather than on relations between the activity and one's self-definition or values (3).

Furthermore, the outcomes that are assessed in experimental studies in this realm typically occur over a period of minutes, hours, or weeks rather than longer lengths of time, as occur in actual educational or workplace settings. Specifically, the ability of instrumental motives to effectively undermine the positive influence of internal motives on engagement in a course of action has not been demonstrated in a real-world context in which the outcomes have the potential to shape individual education and career trajectories and, more broadly, to shape public institutions. Even less is known about the impact of holding additional types of motives at varying levels of strength in these realms.

There is some research that may provide clues. Researchers have reported the negative impact of holding multiple motives on individuals' experience of a course of action they have voluntarily undertaken, demonstrating that holding multiple motives yields more stress and less satisfaction with the activity at hand (12). Other research in educational contexts that has differentiated between autonomous and controlled motivation (3) suggests that autonomous motivation predicts stronger persistence and better performance (13, 14), whereas controlled motivation predicts lower engagement and performance (15, 16).

Furthermore, students experiencing high levels of both autonomous and controlled motivation have lower GPAs and procrastinate more than those with high levels of autonomous motivation and low levels of controlled motivation (17). Similarly, evidence from workplaces suggests that employees experiencing high levels of both autonomous and controlled motivation are poorer performers, even when their levels of initiative are high (18). Although these studies focus on the relationship between motivation inherent in the individual rather than for the activity at hand, the pattern is instructive: motivation that stems from sources external to the self undermines key outcomes.

Clarifying the relation between different types of motives is of great practical significance. Whether called instrumental, controlled, or extrinsic (2, 3), some level of motivation from sources external to the activity itself is likely to occur in anyone undertaking a paid activity, which includes essentially every working adult. Because most people must work to make a living, instrumental consequences are ever present, and instrumental motives are likely present; thus, understanding the ways in which the strength of these motives vary and interact with motives internal to the activity is essential if we are to create work environments in which people work effectively and energetically.

In the present study, we hypothesized that having strong internally based motives for undertaking a course of action will be associated with stronger persistence and better performance, but when these internally based motives are accompanied by strong instrumentally based motives, outcomes will be worse across a range of indicators of persistence and performance. We tested our hypotheses with data drawn from nine classes of West Point cadets at the start of their education, linking the strength of their various motives for attending West Point with outcomes that reflect their persistence and quality as military personnel between 4 and 14 y later. Although others have established the importance of grit for making it through West Point (19), the impact of cadets' motives on this and later career outcomes is not yet understood.

Specifically, we conducted analyses of data drawn from 11,320 cadets from nine consecutive entering classes of West Point cadets (the classes of 1997–2006). Data from the class of 2003 were dropped, as the survey instrument used that year used response categories that did not align with the questions for the items pertaining to cadets' motives for attending West Point. We assessed the impact of cadets' motives for attending West Point on the likelihood that they would successfully complete their studies and become commissioned officers, remain military officers beyond the mandatory 5-y period of service required

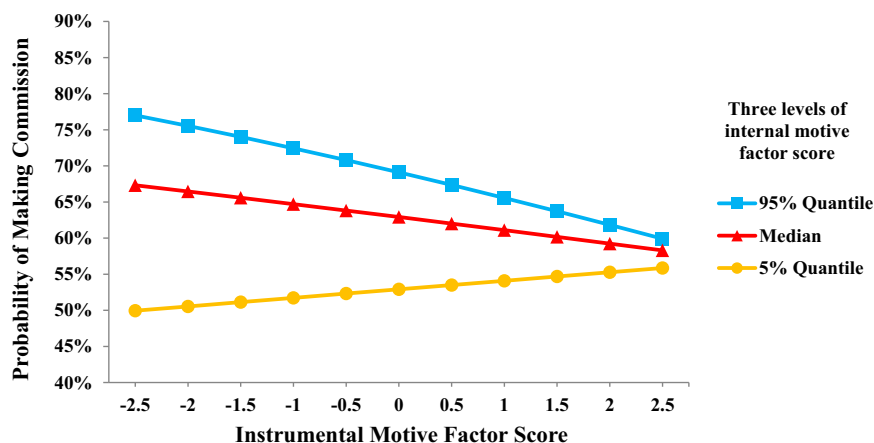


Fig. 1. Effect of instrumental factor (F3) on internal factor (F4) for probability that cadet will make commission (collapsed across class years). Cadets who simultaneously endorsed instrumentally based (F3) and internally based (F4) reasons for enrolling were less likely to become commissioned officers ($P < 0.0006$). $n = 10,239$.

following graduation, and be selected for consideration for early promotion during their 5 y of mandatory service.

Results

Across two different survey measures administered by the institution at the start of their first year, cadets indicated how much each of a set of reasons offered represented their reasons for attending West Point, which allowed them to endorse any number of reasons at various levels of strength (response scales for the two measures ranged from very important to not important on a 1–3 Likert-type scale; and very positive to very negative on a 1–5 Likert-type scale). Reasons offered in the survey ranged from the prospect of getting a good job (instrumental), to economic necessity (cadets do not pay tuition), to a desire to be an Army officer (internal). Of the various reasons offered, two types were of key interest: reasons indicating an internal desire to become an Army officer and reasons indicating an instrumental desire to gain eventual outcomes associated with attending West Point. The data are archival; thus, none of the items in the surveys completed by cadets perfectly captured the distinction between “internal” and “instrumental” motives. For example, there were no items intended to capture a “pure” internal motive, defined to mean that the activity of becoming a West Point cadet was a meaningful and valuable end in itself (3). However, this motive is “internal” in the sense that the desire to be an Army officer requires that one do the things that Army officers do. In this way, it is akin to “being a soldier” (internal) rather than “getting a good job” (instrumental).

A total of 31 reasons appeared in the surveys and were subjected to exploratory factor analysis (EFA) (20) following assignment by A.W. and B.S. as being internally based, instrumentally based, or neither (see *SI Materials and Methods* for more information on item-level analyses). We retained 24 items after dropping those that failed to load stably on one or two factors. We identified six factors (*SI Materials and Methods*) that maintained stability after splitting the sample and conducting EFA with half of the sample. Next, confirmatory factor analysis (CFA) showed that the six-factor structure suggested in the EFA results was appropriate (Comparative Fit Index: 0.953; Tucker Lewis Index: 0.961, and root mean square error of approximation: 0.042). The factors largely reflected several motive types identified in earlier work as guiding the decision to volunteer (12). Of the factors identified, two key factors addressed our interest in internal and instrumental motives. The first factor, which included items regarding the strength of cadets’ desire to become an Army officer as well as to receive leadership training, was most indicative of an internally based motive for attending West Point, following our a priori coding, and reflected cadets’ desire to become an Army officer—the core aim of the institution—and improve themselves in the process. If this were an instrumental motive, we would expect it to be related to other instrumental motives, which it was not; leadership training is core to the aspiration to be an effective Army officer, as one could not be an effective Army officer without it. The second factor was most indicative of an instrumentally based motive and reflected cadets’ desire to attend West Point because of its reputation, as well as to eventually get a better job and make more money in their later career by following this path. Secondary to these factors were four additional factors that tapped different motives for attending West Point. Specifically, a third factor also reflected an instrumentally based motive but was rooted in present economic need rather than future instrumental outcomes, and was based in cadets’ having been offered economic assistance and low (in this case, zero) tuition. Two other factors reflected the relational influence of others in attending West Point, akin to controlled motivation (3), with one factor representing the influence of parents and relatives and the other reflecting the influence of teachers and counselors. A final factor

was indicative of a desire to gain study skills and become more cultured by attending West Point. Although this factor has internal characteristics, motives of this type could be satisfied by going to any college or university.

All analyses focused on the lagged effect of motives held upon entry to West Point on outcomes achieved between 4 and 14 y after these motives were assessed. As predicted, logistic

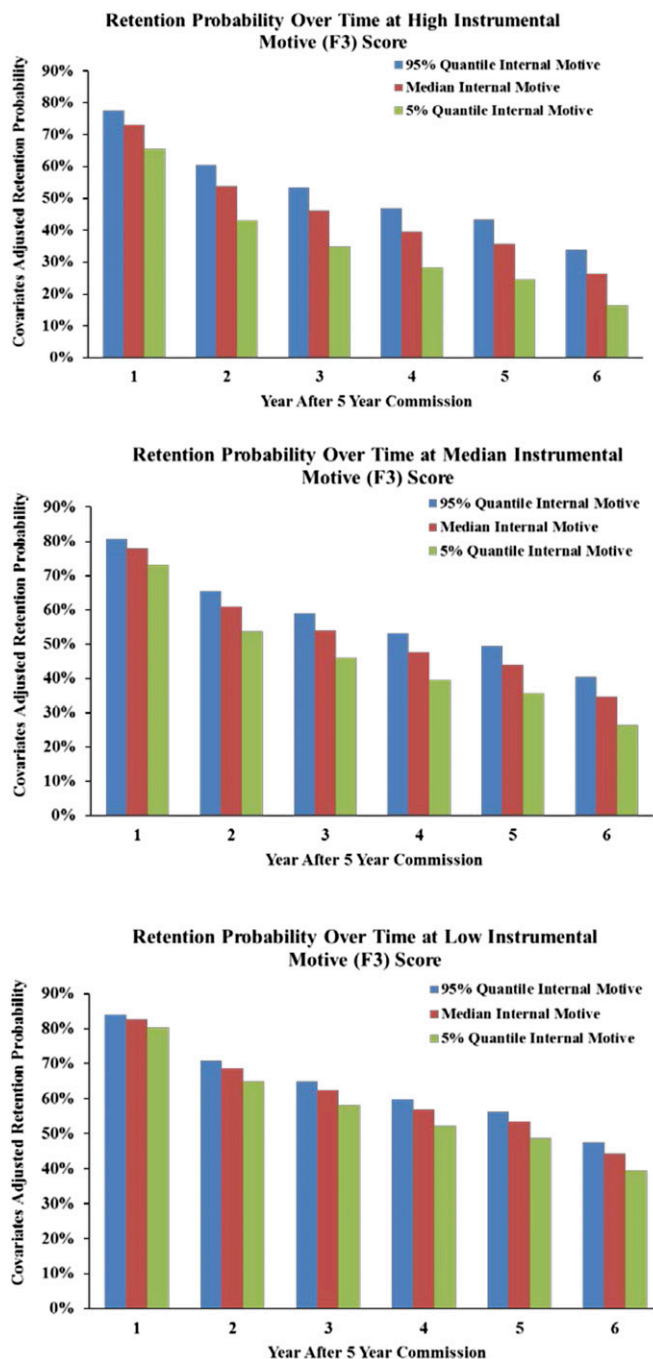


Fig. 2. Retention probability after completion of mandatory service at different levels of instrumental motivation. Each graph shows the impact of internally based motives on retention probability at high (95% quantile), median, and low (5% quantile) levels of instrumental motives. Officers are more likely to exit the military following their mandatory service period, except in cases where their internally based reasons for attending West Point were strongest ($P = 0.01$). The graphs reflect the logit-transformed probability of remaining in the military. $n = 7,663$.

regression results controlling for age, sex, race, high-school grades, SAT score, parental income, religion, entering year, other factors, and interaction terms indicated that the effect of holding stronger internally based reasons for attending West Point on graduating and becoming a commissioned officer was positive and significant (F4: $\beta = 0.22$, $P < 0.0001$) (Table 1). This effect also extended their service as Army officers beyond the 5-y mandatory period into years 6, 7, 8, 9, 10, and 11 (F4: $\beta = -0.12$, $P = 0.0009$), an indication of persistence (Table 1). The negative parameter estimate indicates less risk of leaving the military and higher likelihood of staying in the military. All retention and consideration for promotion analyses used an inverse probability weighting to account for attrition in the sample over time (*SI Materials and Methods*). The effect of holding stronger internal motives was also positive and significant for predicting selection into the group considered for early career promotions during their mandatory 5 y of service (F4: $\beta = 0.20$, $P = 0.0006$), an indication of high-level performance (Table 1). As predicted, for cadets holding stronger internally based reasons for attending West Point, simultaneously having instrumentally based reasons to attend rendered cadets less likely to graduate and become commissioned officers (F3 \times F4: $\beta = -0.07$, $P = 0.0006$) (Fig. 1 and Table 1). Furthermore, once cadets became commissioned officers, having stronger instrumentally based reasons for attending West Point made these cadets—now officers—more likely to exit the military following their mandatory service period, except in cases where their internally based reasons for attending were strongest, even after correction for selection bias (F3: $\beta = 0.16$, $P = 0.0003$; F3 \times F4: $\beta = -0.03$, $P = 0.01$) (Fig. 2 and Table 1). As Fig. 2 indicates, the strength of instrumental motives had a significant and visible negative impact on retention in the military, whereas holding strong internal motives acted to ameliorate this effect across the board. Specifically, retention fall-off was steepest when instrumental motivation was highest (Fig. 2). However, strong internal motivation reduced this negative effect. Finally, during their mandatory service period, cadets were less likely to be considered for early promotion to the extent that their instrumentally based reasons for enrolling at West Point were strong but their internally based reasons were weak (F3: $\beta = -0.27$, $P < 0.0001$; F3*F4: $\beta = 0.06$, $P = 0.04$) (Fig. 3 and Table 1), all in direct support of the harmful effect of instrumental motives on internal motivation.

Instrumentally based reasons for enrolling at West Point predicted exit from the military at every time period after the sixth year of service as an officer (up to year 11) (F3: $\beta = 0.16$, $P = 0.0003$) (Table 1), as well as being passed over for consideration for early promotion (F3: $\beta = -0.27$, $P < 0.0001$) (Table 1), but reasons

for attending that were based on current economic need predicted retention as well as consideration for early promotion (F2: $\beta = -0.05$, $P = 0.01$; and $\beta = 0.09$, $P < 0.0001$) (Table 1). Each outcome was also predicted by the interaction of parental influence and internal motives to enroll at West Point; because of space restrictions, these interactions are not explored further herein.

Discussion

It seems obvious and incontrovertible that if people have two reasons to do something they will be more likely to do it, and will do it better, than if they have only one. It is precisely the “obviousness” of this claim that explains why the overjustification effect and motivational crowding out have received so much attention. However, much of that attention has been in the form of what might be called experimental party tricks: reward people for doing something they like and they like it less. Demonstrations of this form miss the fact that in real life, people bring multiple motives to almost any course of action, often, far more significant courses of action than those assessed in experimental studies of motivation. The instrumental does not have to be imposed from outside. Additionally, they fail to show that the undermining effect of instrumental outcomes is any more than a temporary deflection from what internal motives would produce. In our study multiple motives presumably persist over time, and their effects certainly persist over time. Our results demonstrate that instrumental motives can weaken the positive effects of internal motives in real-world contexts and that this effect can persist across educational and career transitions over periods spanning up to 14 y. Instrumental motives crowded out internal motives, harming cadets’ chances of graduating from West Point and becoming commissioned Army officers. Following their entry into the Army, officers who entered West Point with stronger instrumentally based motives were less likely to be considered for early promotion and to stay in the military following their mandatory period of service, even if they also held internally based motives. In this report we have emphasized the negative impact of instrumental motives on the effects of internal motives, but put another way, internal motives help to stem the deleterious effects of instrumental motives.

The results suggest that across long periods of time, during which individual motivations could well be shifting, understanding the initial motive structure that causes people to undertake effortful courses of action is valuable in predicting important outcomes. The lagged nature of the research design used here does not allow for the explanation of additional variance that would surely result from measuring changes in the motivational arcs of cadets during the interim years that

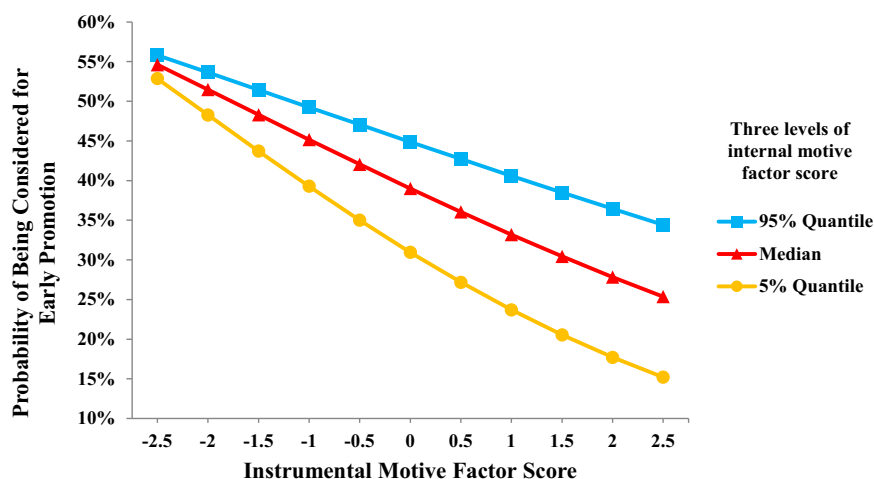


Fig. 3. Effect of instrumental factor (F3) on internal factor (F4) for probability of being considered for early promotion (collapsed across class years). Cadets were less likely to be considered for early promotion as officers to the extent that their instrumentally based reasons for attending West Point were strong but their internally based reasons were weak ($P < 0.05$). $n = 6,162$.

unfolded following their entry to West Point. However, simply knowing the motive structure that existed at the initiation of the activity provides valuable insight into the ways in which the relationship between the motive and the activity shapes outcomes.

The potential scope of applicability of this undermining effect on performance is significant. Most contexts in which people operate offer multiple outcomes for performance. Diligent students learn *and* get good grades. Doctors ease suffering *and* make a good living. Among West Point cadets, persistence and effort would lead both to excellence as officers and materially successful careers. It is hard to imagine a meaningful domain of human activity that does not have instrumental consequences. However, just because activities have both internal and instrumental consequences does not mean that the people who engage in these activities have both internal and instrumental motives. Because instrumental consequences cannot be eliminated from human affairs, what the results suggest is that attention should be paid to motives in addition to consequences, and that efforts be made to structure activities so that some consequences do not become motives.

What might such efforts look like? We speculate that there are three features of organizations that might turn instrumental consequences into motives. First, if organizations do little or nothing to emphasize their purposes, aside—for example—from earning profits, internal motives may wither while instrumental motives become ascendant. Small but regular reminders of organizational purpose can keep internal motives dominant and improve employee performance at the same time (21). Second, if organizations use instrumental consequences as incentives (e.g., bonuses, stock options, raises), they may communicate to employees the assumption that what should motivate the employees is the set of instrumental consequences that are available. Instead, a range of meaningful consequences could be highlighted (e.g., impact on others, mastery). Finally, we speculate that the character of the work itself may turn instrumental consequences into motives. When workers are rigidly supervised, with little autonomy to shape the nature of their daily activities, this may erode motives that would be internal to the work if the work were structured differently (22). The ability to shape the activity itself, in ways that increase its inherent interest (23) or meaning (22), boosts the long-term motivation that is necessary to longevity

and success in a number of contexts (24). Even when the content of the tasks involved cannot be shaped by individuals seeking to maintain their motivation, evidence suggests that simply having a realistic understanding of the tasks involved in a course of action improves engagement and retention over time (25).

There is a temptation to use whatever motivational levers one has to recruit participants or energize performance. If the desire for military excellence and service to country fails to yield the Army the recruits it needs, then perhaps appeals to “money for college,” “career training,” or “seeing the world” may work. This might be called a “shotgun approach” to recruitment; if one piece of buckshot fails to hit the target, perhaps another one will. This shotgun strategy may get more recruits, but it may also yield worse soldiers. If a subset of students is not interested in learning, or even in grades, then offers of financial incentives for good attendance and high performance may reach students who cannot be reached in other ways. The reasoning behind such strategies is completely understandable, but it may be unproductive or even counterproductive. Structuring a course of action to be more attractive by emphasizing both activity-specific and instrumental reasons to engage in it may have the unintended effects of decreasing the likelihood that individuals and the institutions of which they are a part will realize the benefits of long-lasting persistence and strong performance.

Previous research has shown that people who do the same work can view it as a job, a career, or a calling, and that people who view their work as a calling find more satisfaction and do better work than people with the other two orientations (26). Callings have several characteristics, but one significant factor that distinguishes them from jobs and careers is the relative insignificance of instrumental factors to why people are working in the first place. Instead, callings denote a focus on the fulfillment experienced from the work itself, often accompanied by a sense that the work contributes to others in a meaningful way (27). Finding ways to emphasize the internal and minimize the instrumental may lead to better and more satisfied students and soldiers.

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