

**THE MAIEUTICS OF GOAL ARTICULATION:
MOTIVATING THE CHOICES
OF HIGHEST IMPORT**

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Abstract

Research into the consequences of goal-setting clearly demonstrates the positive impact that goals exert upon performance. These findings have become so broadly disseminated as to have become common knowledge. Nevertheless, people frequently fail to set the goals that would help them to achieve their own desired ends. This dissertation explores possible explanations for this failure. One source of insight springs from considering the dynamic construction of the 'self', which traces back to William James' seminal work. The dynamics of identity construal hold open both a promise and a threat. As a domain increases in importance to the self, it simultaneously becomes more daunting. This conflict is analogous to certain failures to promote or preserve self-interest which have been analyzed from the perspective of behavioral decision making.

Building on this theoretical framework, three experiments empirically test the hypothesis that techniques for increasing self-resources can illuminate the paradoxical failure of people to formulate explicit goals for themselves in the domains they most value. Experiment I demonstrates that people do in fact articulate more explicit goals for relatively lower-priority value domains. This robust phenomenon is labeled the Delmore Effect. Experiment II explores a connection between goal-setting theory and Steele's paradigm of self-affirmation. The final experiment underscores the manner in which self-relevant affirmations can transform the clarity and explicitness of high-priority goals.

The three experiments demonstrate the delicate balance required to avoid triggering dissonance effects, since it appears possible that overly direct attempts to affirm the self's most valued domain can exacerbate the failure to articulate relevant goals. Affirming related domains, which do not overtly confront the most important domain, appears to be the experimental technique which enables people to overcome the Delmore Effect.

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*"You're probably not thinking seriously of becoming a stoker, but that's precisely the easiest way to become one."
— Kafka, "The Stoker"*

Talented individuals often use their gifts to create prodigious distractions. The gifts lavished upon each human being suffice to achieve miracles, if those talents are well-directed. Picasso (Gilot, 1964) said of himself: "Everybody has the same energy potential. The average person wastes his in a dozen little ways. I bring mine to bear on one thing only: my painting, and everything else is sacrificed to it -- you and everyone else, myself included." (p. 346) If we are not all inchoate Picassos, we still must choose how to channel our energies. This choice, terrific in its power, inspired Thoreau (1854) to write the great American self-help book, Walden Pond, which began with the following observation:

I know of no more encouraging fact than the unquestionable ability of man to elevate his life by a conscious endeavor. It is something to be able to paint a particular picture, or to carve a statue, and so to make a few objects beautiful; but it is far more glorious to carve and paint the very atmosphere and medium through which we look, which morally we can do. To affect the quality of the day, that is the highest of arts. Every man is tasked to make his life, even in its details, worthy of the contemplation of his most elevated and critical hour. (1854/1980, p. 1)

If the power within each soul is terrific, it surely can also feel terrifying. Every story of deliberate self-transformation might easily be contrasted with a

poignant account of squandered talent. While each such biography would reveal unique obstacles, the interest here is directed toward trying to discern factors that would assist individuals to take the very steps they themselves would claim as being in their own self-interest.

One inspiration for this research program springs from an exposure to the life of the poetic prodigy, Delmore Schwartz. His first collection of stories, In Dreams Begin Responsibilities (1938), was greeted as a herald of a fresh approach to literature. Notwithstanding its nuanced irony, the title story eerily anticipated Delmore's own life. A young man wanders into a theater, and watches his own family life unfold as it flickers on the silent movie screen. Though he sees the pain unleashed about him, his clear awareness contributes only to a refined observation of miseries that cannot be altered. And indeed, the catastrophic failure of Delmore's talent, and the prodigal energy he devoted to his own undoing, makes a story as fascinating as his early fiction. His wanderings can almost be compressed to an epigram, found in an editorial gloss on his posthumous works:

This volume contains nothing on James Joyce. Two short pieces could have been included, but the editors thought them too perfunctory, too hastily journalistic to represent adequately Delmore's vast knowledge of the work of his chief literary hero. A likely guess would be that an extended essay or book on Joyce was one of Delmore's long entertained projects and that he never accomplished the project *precisely because he thought of it as crucial.* (emphasis added; Dike & Zucker, 1970, p. xiii)

Delmore's failure was due not simply to neglect. Instead, the daunting task he hoped to achieve apparently contributed to his failure to begin its execution. Such a lapse is familiar to all who have observed the all-too-human tendency to channel one's energy into tasks utterly incapable of advancing one's avowed aims.

To better understand the ubiquity of this human tendency, this research attempted to achieve the following: First, it was important to discover the prevalence of this tendency, hereafter called the "Delmore Effect". The Delmore Effect occurs whenever a person directs her attention toward low-priority goals, in spite of the awareness that more pressing goals ought to be developed. Because of the connection this bears with the dynamic construction of identity, the research also aimed to explore the possibility of vanquishing the Delmore Effect via manipulations taken from the self-affirmation paradigm. The motivation for adopting such an experimental approach is grounded in the recognition that resources within the self are vital to undertaking value-relevant pursuits. The daunting nature of truly important goals may motivate the self to deflect this anxiety by attending to less important, but also less threatening, goals.

As Kurt Lewin advised all researchers interested in the practical implications of psychological research, "If you want to understand something, try to change it." Through a series of self-affirmation manipulations, the research here attempts to demonstrate that it is possible to appropriately

mobilize self-resources so that truly important life goals can be formulated. While the articulation of clear goals is but one step toward their eventual realization, abundant evidence has demonstrated that goals do significantly improve performance. This evidence has been widely recognized, both by researchers and the world at large. What has not been as directly addressed is whether certain simple steps might facilitate the formulation of those goals that matter most.

Chapter I: Defining Goals

Experimental research on goals has repeatedly referred to a closely related cluster of concepts. Locke and Latham's (1990) description is most consonant with the experiments described here: "Goals define for the individual what an acceptable level of performance or direction of action is. Actions that fall short of desired ends are appraised as unsatisfactory" (p. 87). Bandura (1997) developed a different description while mentioning many of the same essential factors: "Goal systems ... usually involve a hierarchical structure in which the goals that operate as the proximal regulators of motivation and action subserve broader goals that reflect matters of personal import and value" (p. 133). A goal's components, described in a checklist fashion, include the following elements: 1) a psychological representation of a state that is 2) explicit, as well as 3) motivationally attractive, 4) to be realized in the future.

Past research on goals has involved a variety of divergent approaches, which range from abstract cognitive analyses to social-motivational approaches. A brief review of these variants will help to contextualize the research pursued here.

One early and highly influential analysis of goals appears in Miller, Galanter and Pribram's Plans and the Structure of Behavior (1960). The central role they gave to purposive, future-oriented actions is announced in the book's very title. It was their ambition to demonstrate that mental

structures quite similar to goals could be used as an analytical unit for building up psychologically nuanced behavior. In their cognitively-oriented approach, the basic operation was the TOTE (Test-Operate-Test-Exit). Essentially, organisms are viewed as continually sensing their environment through an initial "test," which then elicits an effort to change or respond to the environment ("operate"). Once this step is executed, the organism tests again to determine whether the operation resulted in the desired environment. If successful, the organism can "exit" after running this particular unit of TOTE. Miller et al. demonstrated the power of analyzing behavior into hierarchical levels of future-oriented responsiveness. Yet a theory can be too successful: TOTE encompasses any behavior more complex than a reflex arc. It is probably not very helpful to claim that people possess 'goals' to grab a pencil or scratch their nose. Such decisions and actions are so ephemeral that they need never be more than tacitly formulated.

Explicit versus Tacit Goals

Several researchers have dedicated intensive effort to exploring what might be considered tacit or "unconscious" goals (Gollwitzer 1990a, 1990b; Wegner, Schneider, Carter, & White, 1987; Wegner 1997). Such goals involve tacit plans that change the probability of action at some future point in time. Wegner's (1997) program of studying "ironic control" deserves especial mention here. Wegner has found many laboratory examples of the pervasive

interference of what Edgar Allan Poe had labeled the "imp of the Perverse." When people try not to think of a white polar bear, for example, it becomes nearly impossible to stop thinking of one. In other circumstances, when people attempt to do a low-level physical task, such as hold a pencil completely still, they end up moving far more widely than if they had been given a less narrow directive (e.g., try to keep the pencil within three inches of the target).

Is there a connection between these suggestive findings and more explicit long-term goals? Most of Wegner's experiments focus upon low-level, short-range impulses that wobble a great deal more than larger-scale plans. Consider, for example, processes which operate with feedback (Wiener, 1961), such as the guidance system of a "smart" bomb. This will help clarify the distinction between low-level and higher-level orientations. At a micro-analysis, the missile may be 'off-course' over 90% of the time. But, because feedback mechanisms continually update the missile's trajectory, it would be a gross category error (Ryle, 1949) to assume that the ultimate hit rate for these bombs must also be off-target 90% of the time. This difference between lower and higher level goals is perhaps the single most important distinction between real-world plans (which typically encompass activities over many days) and many laboratory manipulations (which usually involve tasks to be completed in under one hour).

Mastery versus Performance Orientation

Other efforts to characterize goals have been more interested in contrasting the connection between individuals' feelings about their personal achievements and the aims they bring to bear on performing a task. Carol Dweck (Dweck, 1990; Dweck & Leggett, 1988) has clarified the tacit expectations that people harbor about self-evaluation when they are asked to tackle difficult problems. She has distinguished between a focus that is healthy ("mastery-orientation") and one that can frequently be self-defeating ("performance-orientation"). Mastery-oriented individuals actively seek out difficulties, precisely because the more difficult challenges will often afford the greatest opportunities for learning. Performance-oriented individuals prefer problems that reinforce their conception of themselves as essentially intelligent. This emphasis on performance causes them to adopt strategies that limit the risk of failure, even if that dooms them to relatively uninteresting and routine pursuits. Dweck's demonstration of the contrasting effects of these two orientations does not depend upon the individuals expressly committing themselves to one or the other orientation. Hence, this line of research is the clearest instance of extending the term 'goal' to cover the underlying expectations which influence behavioral tendencies, even when people may have no awareness of the regular patterns displayed in their preferences for particular strategies.

Although the line between tacit and explicit goals may be as elusive as the line that separates night from day, the experiments reported here explore the impact of explicitly articulating detailed verbal formulations of long-term plans. It is undeniable that intentions concerning the future shade continuously in scope, ranging from a single moment all the way up to many months. Philosophers (e.g., Bratman, 1987) have built the entire discipline of "activity theory" to address the subtle shades that help discern how and when an intention emerges from a mere tendency to behave. Zajonc (1982), in an address to an interdisciplinary forum, exhorted psychologists and philosophers to work on unraveling this skein of associated ideas:

Concepts like commitment, plans, goals, values, task tension, *Aufgabe*, *Einstellung*, set, purpose, aspiration, and many others are linked with intention in a variety of ways, and although they overlap with intention, none of these capture the full meaning of the concept. Intention is a sphere of behavior in which the psychologist and the philosopher alike need to clarify their conceptual network and the method of inquiry. (p. 418)

In the present work, it will not be possible to attack such a grand program. Rather, the experiments rely on provisionally established definitions. A "goal" has been operationalized to refer to those mental structures which have an explicit aim, i.e., which describe a desired outcome with sufficient detail to make it possible to later assess the measure of success. Instead of engaging the difficult relationship between conscious and subconscious goals

and intentions, the subconscious dimension is left outside our purview. The focal question investigated here comes down to this: What social psychological dimensions are required to move from the perspective of moment-to-moment intentions toward formulating an explicit plan that spans months or even years of effort? While decisions and intentions operate at many levels, the research pursued in this work evaluates people's goals as they become articulated in explicitly stated responses to direct questions.

How Do Goals Influence Performance Outcomes?

Setting explicit goals causes performance to improve in a wide range of situations (Locke & Latham, 1990). Goals not only change the cognitive framing and perception of a task, but also affect the motivational attractiveness of achieving a defined end. While goals per se improve performance on most tasks, those individuals who aim at definite, difficult objectives routinely outperform those who do not develop challenging goals.

Cognitive and Motivational Processes

Several reasons account for the effectiveness of explicitly set goals. When someone allows the immediate context to determine her actions, it is all but certain that the cross-cutting demands on her time and attention will preclude the intense involvement required to make serious headway. Herb

Simon's parable (1969) about the two watchmakers, Tempus and Hora, may be relevant here: Both Tempus and Hora are vulnerable to daily distractions and interruptions. Each assembles a watch of about 1,000 pieces. Hora has hierarchically organized her task of assembly into sub-sequences that can be done in isolation. Tempus builds his watches in a single concentrated effort. The consequences of these approaches become clear when evaluating how extraordinarily less efficient Tempus will be. The failure of Tempus to insulate his task from environmental perturbations ultimately insures that Hora will be orders of magnitude more efficient than Tempus, who must begin anew every time he is disrupted.

By analogy, personal goals may produce an advantage by breaking down the continuous life stream into relevant sub-tasks that may be resumed if one is interrupted or delayed. A person without a long-term goal will likely find the claims on her time to be contradictory and ever-changing. Explicit goals create a means for an individual to push back on the flux of environmental demands. Besides determining the focus of one's energy, explicit goals assist in determining how long to persist (Laporte & Nath, 1976; Rothkopf & Billington, 1979). Without well-defined benchmarks, the opportunity to bend under the pressure of circumstances can obliterate a formerly serious resolve to sustain effortful exertion. To prevent such distracting temptations, people need to formulate their aims so explicitly that they cannot be subjectively re-defined under strain (Winograd & Flores, 1986).

Another benefit of goal-setting comes from the simple fact that goals spare the agent the effort of deciding what sub-steps need to be assembled and executed. If this were claimed as an advantage, however, we must be certain not to neglect the effort that first went into breaking the problem down. Suppose a person claims, for example, that it is easier to cook with a recipe than without one. That seems indisputable. Yet, the person who follows a well-specified procedure enjoys the fruits of another's labor (in this case, the original author who wrote out the cookbook steps). If we include an account of the effort expended by the author of the recipe, the actual outlay of energy may look different. A thief may ignore the costs exacted by his gleanings, but not everyone can pursue the benefits of theft over hard labor. This point is mentioned in order to keep our accounts honest.

Besides the benefits that spring from "looking ahead," goals cognitively transform the very perception of subsumed tasks. The premier researchers on goals have summarized this impact by noting that goals can

direct the individual's attention to relevant behaviors or outcomes and even affect how information is processed. This leads to less variable performance and to better performance in relation to such behaviors or outcomes than if goals are nonexistent. Specific goals may also lead to poorer performance on aspects of the task that are not relevant to the goals. Goals, in effect, give the individual 'tunnel vision.' (Locke & Latham, 1990, p. 95)

If one inspects accounts of our society's great achievers, we frequently find a tale of the blindness that accompanies single-minded vision. William Butler Yeats commented on this terrible trade-off: "The intellect of man is forced to choose / perfection of the life, or of the work / and if it take the second must refuse / a heavenly mansion, raging in the dark." In a poll of 198 sprinters, swimmers, weight lifters and other aspiring Olympians, a sports psychologist posed the following scenario: "You are offered a banned performance-enhancing substance that comes with two guarantees: 1) You will not be caught, and 2) You will win every competition you enter for the next five years, and then you will die from the side effects of the substance. Would you take it?" According to a report in The San Francisco Chronicle, "More than half said yes" (September 1998). If we look to artists rather than athletes, we find a similar story. Flaubert remarked that "Art, like the God of the Jews, wallows in sacrifice."

This omnivorous tendency of goals to focus consciousness so narrowly that all other experience is obliterated was portrayed with perspicacity by Felipe Alfau, in his novel Chromos (1990). The main character suffers from a disease of the will, which enables him to achieve his desires by being immediately transported to the moment of their realization: "From now on you will do this many times. You will wish for something very much, you will shut your eyes in impatience and when you open them, the time will have passed and you will find yourself at the moment you wish for" (pp. 51-52). The power of

his will enables him to conquer the poverty of his early life in Spain, and realize his ambition to immigrate to the United States. Unfortunately, the amount of time required to implement a goal can span years or even decades; these years are forever lost to him. From the moment he formulates a desire, he blacks out, only to regain consciousness at the moment of satisfaction. Struggling against his omnivorous will, he aims to restrain his goal-orientation:

I would endeavor not to wish, but sometimes I wished before I had time to think. ... I saw myself growing old in what to me was but the space of a few days, a few conscious scattered days. My life was not my own. I was feeding huge chunks of it to the gaping jaws of my impatience, endeavoring to appease its constant hunger (Alfau, 1990, p. 82).

While this feature of goals may be pathologized (see Ogilvy (1995) Living without a goal), there are clearly times when a person can greatly benefit by creating a buffer against the world's myriad distractions. DeQuincey remarked: "No man ever will unfold the capacities of his own intellect who does not at least checker his life with solitude" (quoted in Storr, 1988, p. 16). As we have seen, the formulation of explicit goals is an act that predetermines the focus of one's attention.

Goal setting is the consummate act of deliberation, which has as one cost the narrowing of experience. Were it possible to fully assess all costs and benefits before deciding when to deliberate, we would ascend beyond our

limited endowments as human beings. The classic account of the intrinsically bounded nature of human planning can be found in March and Simon's (1958, 2nd ed. 1993) analysis of the human propensity to 'satisfice.' Their theory of satisficing directly controverted the standing assumption of economists that rationality entails a search for optimal solutions. At least since Ecclesiastes, scrupulous observers of human planning have remarked upon the frailty of human planning. Samuel Johnson, speaking with his characteristic tone of definitiveness, claimed:

Life is not long, and too much of it should not be spent in idle deliberation how it shall be spent: deliberation, which those who begin it by prudence, and continue it with subtilty, must, after long expence of thought, conclude by chance. To prefer one future mode of life to another, upon just reasons, requires faculties which it has not pleased our Creator to give us. (Boswell, 1799)

This research presented here merely recognizes that a deliberate and planful approach to life will impact the ultimate direction of accomplishment. It is beyond this paper's scope to address whether a life with explicit goals is better or worse than a life lived in sheer spontaneity. Without taking a stand on matters of value, it is a fact that many people are indeed looking for some assistance in formulating their own goals.

Walter Mischel's seminal research (1974; Mischel & Shoda, 1989) further underscored several ways that a goal can facilitate the deliberate development of strategies that support the achievement of a long-term aim. Children were

able to resist immediate, less-rewarding temptations by transforming the situation, often by deliberately invoking distractors so that the delay could be endured. One of the oldest recorded instances of such a strategy can be found in Herodotus, who claimed that the king of Lydia created the sport of ball games to distract his subjects from the privations caused by a series of bad crops: "The plan adopted against the famine was to engage in games one day so entirely as not to feel any craving for food ... and the next day to eat and abstain from games. In this way they passed 18 years." (quoted in Csikszentmihalyi, 1997, p. 70).

Finally, embedding a task within a challenging goal can transform even a dreary obligation into something more enjoyable. Lepper and Gilovich (1982) explored the impact that both goals and fantasy framings had on children's later likelihood to persevere in cleaning up a messy playroom. Even grade-school children's behavior is susceptible to subtle framing effects: when given goals that challenged the children to clean up (either by adopting a faster pace or by increasing the number of objects shifted at once), the children were much more engaged. Moreover, children who had used goals to contextualize an initially dreary task remained more likely to devote more time to the task when asked two weeks later to clean up a similar (but not identical) room.

The foregoing review has shown how goals mobilize useful resources in a variety of ways: they focus attention, dispassionately specify a desired rate of

investment and persistence, and even change the perception of specified tasks, all of which increase overall effort invested. It should therefore be unsurprising to report that hundreds of studies, in the laboratory and out in the world, have shown goal-setting to be a highly effective method to increase productivity (Locke & Latham, 1990).

Difficult versus "Do-your-best" Goals

Not all goals are equally effective. In the experiments assessing the connection between goals and performance, it has become clear that more difficult goals exert greater influence upon final outcome. There appears to be a positive linear relationship between goal difficulty and accomplishment, which only begins to flatten at the limits of human competence (e.g., Erez & Zidon, 1984; Locke, Chah, Harrison and Lustgarten, 1989).

In the relevant studies, researchers typically assign one group a goal to "do your best," in contrast to another group that receives a specific, difficult goal. "Difficult" is usually operationalized (Erez & Zidon, 1984; Locke, et al., 1989) as a level of performance that can only be reached by 5 to 10% of the population. Logically and semantically, one cannot do better than one's "best." So, it would at first appear that such an aim, to "do your best", would be maximally demanding. Four independent meta-analyses showed that "do your best" goals were less successful than specific, difficult goals. In all four summaries, those who were assigned specific, difficult goals were found to

perform from 8% to 16% better than participants who were prompted to "do your best" (Locke & Latham, 1990, p. 30).

Complex versus Simple Tasks

Some researchers have disputed whether goals are in fact appropriate when brought to bear on tasks requiring more complicated mental processing, since many of the original goal-setting experiments focused on tasks involving physical dexterity or manual labor. It has been argued that goals may actually interfere with task performance by adding an attentional drain when participants are trying to master complex skills, since they must simultaneously attend both to their performance and to their target goals. In a study of air-traffic controllers learning to master the skills of their job, Kanfer and Ackerman (1989) report that participants assigned "do your best" goals were as successful as those given explicit benchmarks. This result was interpreted as demonstrating that explicit goals interfered with achievement because their explicit articulation presumably added cognitive overhead. Yet, in a test of the attention-overload hypothesis, Deshon and his colleagues (Deshon, Brown, & Greenis, 1996) asked participants to engage in two tasks simultaneously. Even at the very limits of human attentional resources, those participants who were assigned explicit goals did not perform worse than those who worked with simple "do your best" goals. This result

undercuts the claim that goals necessarily distract from the concentration required to master complex tasks.

Temporal Range of Goals

One of the unresolved issues in goal-setting theory concerns the optimal time span over which a goal should range. For instance, suppose someone aims to write a 400 page book in one year. Should he aim to write about a page a day, or 35 pages a month? Should he select either finer-grained or coarser benchmarks, or is there an optimal combination of varying time-frames? Bandura (1997) has demonstrated, particularly in collaboration with Dale Schunk (Bandura & Schunk, 1981), that there are contexts in which proximal (short-term) goals give superior results. Bandura and Schunk's experiments have frequently studied students who ascend a ladder of progressively more difficult skills, such as those tasks involved in mastering arithmetic (e.g., Bandura & Schunk, 1981). Adopting a strategic approach in such a cognitively well-structured domain appears to facilitate learning. The very fact that the domain has been so structured at the outset, however, may suggest one way that it differs crucially from many other life tasks. Thus, in contrast, Kirschenbaum, Humphrey and Malett (1981) reported that college students who developed monthly goals improved their study habits more than those assigned to develop four-day goals. Further research is necessary to resolve the most appropriate temporal window for goal formulation.

Nevertheless, this ambiguity does not obstruct the interpretation of the present experiments, since all participants were provided with the same one-year time-frame for formulating their goals.

Goals Seen Through the Lens of Prospect Theory

Recently, a new line of research (Heath, Larrick & Wu, 1999) has offered a different account of how goal-setting motivates persistence and performance. These researchers propose that the experimental literature on goals be integrated with the modern language of utility known as Prospect Theory (Kahneman & Tversky, 1979). Heath, et al. (1999) interpret goals as establishing the frame of reference from which people evaluate their success or failure. While this theoretical shift in perspective is simple to describe, it has the potential to integrate a wide range of disparate results. Heath and colleagues have argued that "do your best" goals resemble the standard model of diminishing marginal utility, whereby each additional increment in performance yields an increasingly smaller harvest of satisfaction, as shown in Figure 1. When people hold goals framed solely in the vague terms of "doing your best," they will fail to discriminate clearly between the rewards of easily accessible versus more remote and demanding regions of accomplishment. The motivational impact of increased performance will quickly flatten out. Such people will perceive little difference in value

between their current performance and that which is likely to be accessible with a slight increase in exertion.

One of the crucial contributions of Kahneman and Tversky's Prospect Theory (1979) was the observation that people "frame" their pursuits in windows of assessment. These frames create substantive changes in evaluating otherwise equivalent options. Rather than aggregating all prospects into a single agglomerated definition of overall utility (or total wealth), people are prone to evaluate each instance of opportunity on its own terms. One important consequence of such segregated assessment is that the preference for an option is influenced by the way it is packaged (or "framed"). The classic experimental results demonstrated that people reliably chose one option when presented in isolation (e.g., the risk to lose a large sum rather than the certainty of losing a smaller sum), and yet chose the opposite option, when it was nested within a complement of options that made the gain appear most salient.

Two additional insights into human behavior are encapsulated by Prospect Theory: First, people find a given loss far more aversive than they find an equivalent gain attractive. This is succinctly captured by Kahneman and Tversky's (1979) original epigram: "Losses loom larger than gains." More precisely, the preference function can be plotted by a characteristic S-shape curve, as illustrated in Figure 2. Behaviorally, a diminishing return function means that the increase in one variable (e.g., numerical gains) does not

commensurately increase the correlated output variable (e.g., satisfaction). Finally, there is an upturn at the very extremes, since the movement from a middling probability (say, from 70 to 80%) is valued at a rate lower than an equivalent movement which converts a 90% probability to a certainty. That is just to note that there is an observable "certainty effect," where individuals disproportionately appreciate choices that transform a highly probable event into one that is certain.

Heath and colleagues' contribution is due to their proposing a link between Prospect Theory and goal-setting. Their point of departure is the claim that goals define the reference frame against which performance is evaluated. Because of this perspective, individuals will view any output below an adopted goal as psychologically equivalent to a "loss." Although the experiments pursued in this dissertation presuppose that goal-setting powerfully contributes to ultimate accomplishment, the synthesis of these two literatures offers a novel explanation for the effectiveness of goal-setting.

Briefly, Larrick, Wu and Heath (1999) have summarized the consequences of their theory as entailing the following:

First, the value function suggests that goals divide the space of possible outcomes into gains or losses, success or failure. ...

Second, creating the possibility of losing is significant because people think about losses and gains differently. The shorthand term for this is loss aversion: Losses are more painful than gains

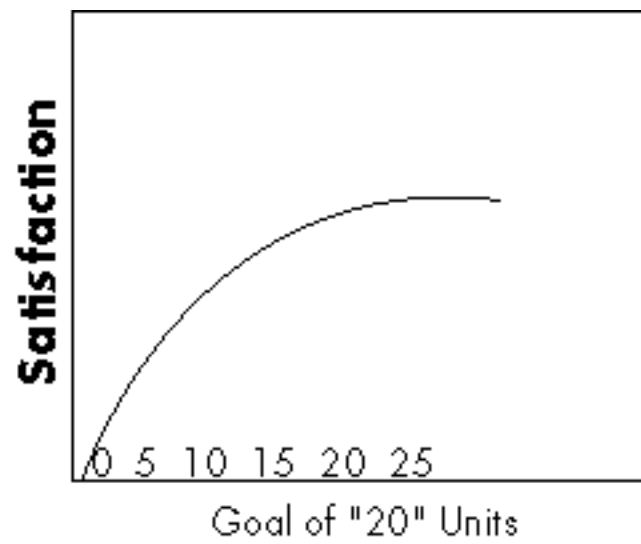


Figure 1. "Do your best" goals mapped as a curve of diminishing returns.
 (re-drawn from Heath, Larrick & Wu, 1999)

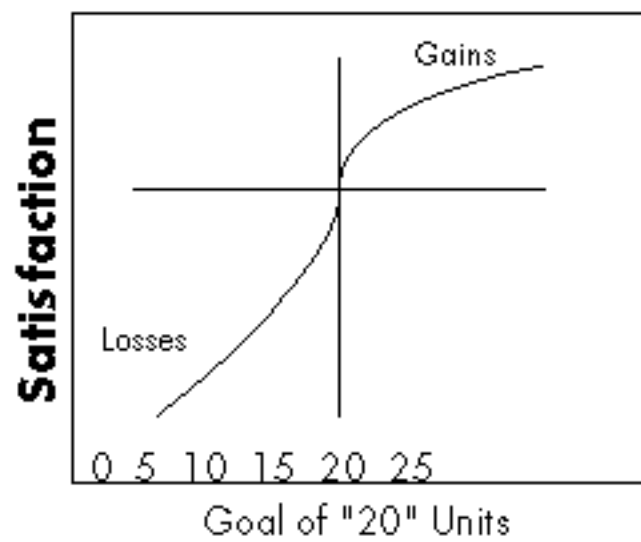


Figure 2. S-Curve of Prospect Theory applied to goal setting.
 (re-drawn from Heath, Larrick & Wu, 1999)

are attractive. The parallel effect in goal setting is that failure is a more intense experience than success. Since failure is more painful than success is satisfying, eliminating a sense of failure is actually more motivating than achieving a success (p. 20).

One final consequence of the S-shaped value function is revealed by the fact that the nearer one reaches one's goal, the greater will be the motivational allure of that goal (Heath, et al., 1999):

Diminishing sensitivity predicts that goals will affect effort differently depending on whether people are above their goals (in the concave region of "gains") or below (in the convex region of 'losses'). People should be willing to exert less effort as they move away from their goal, but they should be willing to exert more effort as they approach their goal. (p. 89)

While many of the connections between Prospect Theory and goal-setting await further empirical validation, Heath and colleagues' research agenda contributes a new vantage point from which to analyze the diverse motivational and behavioral impacts of goals.

Chapter II: How Do People Conceive of Goals?

Almost everyone recognizes the practical contribution that goals can make to achieving personal aims. In an exploratory questionnaire run at Stanford, 94% of Psychology 1 students reported feeling that they would be able to achieve more by setting goals for themselves. Students were confident that in domains as disparate as making more friends and preparing for better career prospects, the setting of goals would help them to better achieve their aims. Nevertheless, in spite of the contribution that goals are expected to make, people frequently fail to formulate explicit goals.

In one laboratory exploration of how individuals appear to approach the task of setting goals, for instance, Reither and Staudel (1985) employed a paradigm in which people were asked to assume a specific administrative role. In one of their experiments, participants were told to respond to the kinds of complex problems which would be faced by a director of aid in an African refugee camp. After being given a welter of data relevant to the demands of the hypothetical situation, participants then played out a sequence of steps that required strategic planning. The authors concluded:

Generally, people dislike analyzing and even formulating their goals, especially defining them in a precise manner; often, therefore, they are unaware of contradictions. Reither (1980, 1981, 1983a) showed this under a variety of experimental conditions. In

all cases, subjects preferred to leave their goals unformulated or only poorly defined ... (Reither & Staudel 1985, p. 113)

What People Claim as Obstacles to Making More Explicit Plans

Heckhausen & Kuhl (1985) have reviewed their own interview data, and report that "lack of time ... was the most frequent reason given for the blockage of wish development." Data from Stanford students taking Psychology 1 similarly revealed that lack of time was the single most frequently cited reason for failing to articulate their goals. Of course, it is essential to recognize that any attempt to interpret the rationales (or excuses) people provide post facto is bedeviled by serious methodological challenges. People are not necessarily aware of the source of their most serious obstacles. Moreover, people often strive to manage the impressions they present publicly, even in a questionnaire. Nevertheless, this confluence of survey data suggests how people view their own failure to avail themselves of help.

Paradoxically, although people feel that lack of time is their greatest obstacle, some experiments suggest that providing more time may actually cause people to pursue even less effective approaches to day-to-day challenges. Hayes-Roth and Hayes-Roth (1981) ran a series of studies that began by prompting people to plan a day's errands. People systematically took upon themselves more tasks than they could possibly execute during the available time. This appeared to be due to a failure to strategize and directly

assess the kinds of trade-offs that must be made in pursuing real-world actions. Reviewing their own earlier work, Hayes-Roth and Hayes-Roth report a finding that came from manipulating the amount of time the participants were given to draw up a plan: "For problems that imposed severe time constraints, most subjects adopted a top-down approach. For problems that imposed minimal time constraints, most subjects adopted an bottom-up approach" (p. 512). That is to say, people in a rush recognize they must plan in order to make any headway in the face of serious external constraints. When people feel confident that more time is available, they neglect to undertake any strategizing, and pursue a "bottom-up" approach that simply selects tasks by happenstance. It makes sense that people, when forced to compress their planning sessions, will resort to abstract generalizations that appear "top-down." But this result in isolation does not necessarily reveal the motivations at work when participants are not being prompted to make a list of planned steps. Aronson and Landy (1967), however, did not specifically focus on planning or goals, but did find that participants tend to follow a previously set pattern of time allocation, even when the past ration of time was arbitrarily far in excess of the demands of the task. They interpreted this result as a corroboration of Parkinson's Law, which claims that tasks expand to fill all of the allocated time.

The Role of Participant Choice In Goal Research

In almost all of the goal studies reviewed thus far, little attention has been given to the process underlying the generation of the specified goals. Kurt Lewin (1957) greatly esteemed the extra value in group decision making that came from arriving at goals consensually. Yet Locke and Latham (1990) reported that "It has been surprisingly difficult for researchers to demonstrate the effect of goal commitment on performance, because in the majority of studies, goal commitment has easily been achieved" (p. 128).

By contrast, Salancik (1977) criticized the facile assumption that consent is irrelevant. The pragmatics of dialog interaction will often enough create tacit commitment. For one thing, the very fact that the speaker assigns the goal suggests that the listener is presumed capable of meeting it; for another, simply to listen without voicing an objection implies consent. Most field research to date has focused on employment settings where someone has the specific role to manage and give orders. In an educational context, Schunk (1985) found that having children participate in goal setting ultimately contributed to the highest self-efficacy and mastery of arithmetic. Perhaps the sort of minimal choice, as studied by Cordova and Lepper (1996), may be sufficient to mobilize the full motivational assent of individuals.

More to the point, assigned goals have two serious problems. First, this research opens an infinite regress, without ultimate explanatory power. How

do decisions get made that give content to the orders assigned as goals? The fact that goals are exogenously assigned will never illuminate the internal dynamics of goal-generation. In an experiment explicitly designed to assess how goal-setting interacts with intrinsic motivation and achievement orientation, Elliot and Harackiewicz (1994) were nevertheless constrained by their design to note:

Although subjects in the present experiment appeared to accept the goals assigned to them and to become committed to some types of goals (in interaction with achievement orientation), it remains to be seen whether these commitment processes are comparable to those engendered by self-selected goals. (p. 970)

Secondly, such external imposition will not cover the most important life tasks. Self-regulation is crucial if people are to pursue highly specialized skills and intellectual development (Drucker, 1999).

Developing expertise, even if one does not concentrate upon intellectual skills, requires the dedication of extensive time and effort. Ericsson, Krampe and Tesch-Romer (1993) formulated the concept of "deliberate practice" as a term of art to describe this most intimate range of skill development. They examined fields as varied as musical performance, Olympic competition in track and swimming, and even the work of novelists and scientific researchers. The rationale for such generality is explicitly defended:

We believe that an attempt to encompass phenomena normally labeled as perceptual (e.g., chicken sexing), motoric (e.g., typing), or knowledge-based (e.g., physics) within the same overall approach will allow us to identify common methodological and theoretical issues and to consider a common and more differentiated set of learning mechanisms in accounting for achievement of superior performance in any one of these different domains. Such an approach will have the additional advantage of allowing us to consider the many different perceptual, memory, motoric, and knowledge-based aspects of superior performance. (Ericsson & Smith, 1991, p. 13)

Across these diverse fields, Ericsson et al. (1993) described the level of intensity that must be brought to bear on mastering a craft. Accumulating evidence underscores the central importance of the decision to practice, practice, practice. Ericsson et al. documented the intense time (in excess of 10,000 hours) invested by superior musicians and athletes. In the case of both violinists and pianists, the superior cohort's investment (in hours) was found to be almost 20% greater than the next tier (performers who will likely end up as music teachers rather than concert performers). Experts reshape their perceptual and conceptual experience through an iterative escalation of concentrated effort. Even apparently hard-wired physiological differences, such as the relative number of fast-twitch muscles, can be seen as due to the experience of repeated exercise.

Even more interesting, for the purpose at hand, is Ericsson's recurrent emphasis on the sheer strenuousness involved in talent development.

When musicians were asked to rank their favorite activities, they consistently rated playing with other musicians as the most enjoyable. Yet, when asked which activity was most important to their development as musicians, the response was Teutonically unambiguous: the far more demanding task of attentive, largely private musical practice was recognized as more profitable. This finding was echoed across a panoply of reviewed disciplines: The strain of training for long distance runners pushes them past the point at which any "runner's high" would be experienced. As for writers, it is virtually a commonplace to read in a book's foreword the wry recognition of the self-imposed difficulties which could only be surmounted with the book's completion. Orwell compressed this generality into his cheery observation: "Writing a book is a horrible, exhausting struggle, like a long bout of some painful illness."

Experience teaches that "life is hard." Paradoxically, it appears that the harder a person makes her life through the pursuit of a discipline, the more rewarding it will be. One articulate source of psychological documentation comes from the study of "flow" experiences by Csikszentmihalyi (1975, 1992, 1997), who in an early statement of his findings, asserted that "The whole issue of intrinsic rewards eventually boils down to this - the acquisition of skills. Only by having a set of skills is it possible to produce feedback that conveys information about how one has met challenges " (1975, p. 211).

Although this may overstate the cognitive component of intrinsic motivation, it succeeds in highlighting the important role that self-development, education, and gradual transformation contribute to one's future opportunities for rewarding experience. A person negotiates between the demands placed by the social world and the allure of personal development pursued for intrinsic, perhaps even existential, purposes. While it is possible to find sensations that afford intense stimulation, there is little coherence in a life guided by such immediate stimuli-driven pursuits. Only by craft of skill can individuals create occasions for sustained intrinsic motivation. Paradoxically, the access to such rewarding experiences can only be gained via strenuous effort. One difficult activity, as we have seen, involves explicitly formulating long-term goals. But, if situations encourage the formulation of such goals, ultimate effort and achievement will be higher, which itself will positively contribute to the intensified acquisition of skills that support further rewarding challenges.

The Basic Paradox: People Often Fail to Assign Themselves Difficult Goals

The anomaly of goal-setting theory comes down to this: If social psychologists were to summarize the experimental insights relevant to the practical question of how to live a fulfilling and rich life, that summary would certainly mention goal-setting. Goals have been proven to enable individuals to exceed the level accessible by simply aiming to "do their best."

But even those people who recognize the validity of this maxim frequently fail to heed it. As an anecdotal demonstration of this gap, the 20 graduate students taking Albert Bandura's self-efficacy seminar were informally polled in the spring of 1998. This seminar comprised an unusually self-selected group of "true believers," who had just completed the persuasive presentation of the goal-setting literature exhaustively reviewed in Bandura (1997). All twenty students strongly assented to the claim that specific, difficult goals contributed to achieving personal aims. But only one of the 20 students had taken the next logical step, and actually developed even one specific difficult goal.

This informal poll inspired the collection of the data adverted to earlier from a sample of 127 Psychology 1 respondents. Of these students, virtually all recognized that setting explicit goals would make an effective step toward achieving their personal aims. Specifically, they were asked: "Do you believe that it is possible to improve your effectiveness by formulating goals?" This question evoked assent from 94% of the respondents. In spite of the near universal awareness that goal-setting would be useful, almost all of the queried people also confessed that they did not set goals. Specifically, they were asked: "Is there any area in your life where you would like to do better, but have not formulated explicit goals in order to help you do better?" Although they had just agreed that goals were valuable tools, 91% admitted that they had not taken advantage of this useful strategy.

The experiments pursued here, it must be noted, share the presupposition of the 94% of respondents who believe that articulating goals contributes to ultimate success. The literature reviewed above demonstrates that goal formulation directly influences performance in numerous positive ways. Since the positive efficacy of goals is not in doubt, our interest is directed toward illuminating the failure to take advantage of such an invaluable technique. Why do people who express an awareness of the steps necessary to achieve their own desires still fail to implement those very steps?

Analogies from Behavioral Decision-Making

Given the paradoxical quality of these findings, it may help to consider analogous paradoxes that have cropped up in the literature on behavioral decision making. Failures to promote self-interest clearly pose a problem to the cluster of disciplines (game theory, micro-economics, and decision theory) that assume, as a foundational tenet, that every rational being is dedicated to protecting, advancing, and possibly even maximizing egocentric self-interest. In these fields, some sort of motivational impetus is required to kick-start the beautiful machine, which would otherwise hover in inert equilibrium.

Consider how these disciplines confront the paradoxes that follow from the attribution that people are actually trying to use their intelligence to create a life which is rationally connected to the satisfaction of their own personal interests. "Rational" here is narrowly conceived to be identified with

advancing one's own self-interest. Thomas Schelling, initially distinguished as a game theorist, has attended to a range of psychologically intriguing phenomena. Schelling (1984) has proposed that self-management can be fruitfully viewed as a multi-player game. In essence, the motives and decisions made by a single person over time can be analyzed as if that individual were a series of distinct players, each of whom chooses either to cooperate with or to defect on the future society of selves (Minsky, 1980).

The Prisoner's Dilemma

This game, with the binary choice to either cooperate or defect, has long been schematically understood as the Prisoner's Dilemma (Poundstone, 1992). Because of the inherent complexity of conditional interactions between players, game theory attempts to pare this down by iterated application of the logic of dominance. A strategy is *dominated* when its payoff in every instance is lower than that available in another cell in the payoff matrix. For example, consider the choice between a bet that pays (Heads \$8 / Tails \$2) versus a bet, on the same coin, that pays (Heads \$5 / Tails \$0). Since 8 is greater than 5, and 2 is greater 0, in both cases, the first choice dominates the second. Whenever a player can guarantee a better payoff, there is no reason for her to consider the dominated strategy. Rawls (1971) formulated this by advising: "One (short-term) plan is to be preferred to another if its execution would achieve

all the desired aims of the other plan and one or more further aims in addition" (p. 417).

As for the Prisoner's Dilemma, each player chooses between playing C (for "Cooperate") or D (for "Defect"). Choices are made without communicating. Since neither player is aware of the other's choice at the time a strategy is chosen, the sequence of moves is effectively "simultaneous." A game is classified as a prisoner's dilemma when the payoffs form an ordered hierarchy (Traitor > Reward > Punish > Sucker): The highest possible reward goes to the Traitor (one who defects when the other person cooperates). While the Traitor's payoff is the highest, mutual cooperation (Reward) earns a better payoff than mutual defection (Punishment). Mutual defection is less than optimal, yet the worst payoff goes to the player (Sucker) who cooperates when the other turns Traitor. When this structure obtains, players find themselves in a Prisoner's Dilemma.

The paradox of selfish maximization is precisely that it fails to provide the most efficient outcome, even within the narrow characterization of social welfare first defined by the 19th-century economist Vilfredo Pareto. Binmore (1994) gives a clear account of this standard:

A reform that improves the lot of at least one person in a society without harming anyone else is said to be a Pareto-improvement on the current arrangements. A social situation that admits no feasible Pareto-improvement is said to be Pareto-efficient. (p. 68)

In the prisoner's dilemma, each player realizes (too late as it were) that BOTH players' payoffs could move the Pareto-frontier outward, if they could only coordinate their plays in such a way to move from mutual defection to mutual cooperation. Yet mutual defection is the inexorable result of each playing the dominant strategy.

How does the prisoner's dilemma relate to the nature of a single person who faces the choice between making a specific goal or letting the occasion slide? Recall Schelling's (1984) advice to "treat your sometime self as though it were somebody else" (p. 65). The task of choosing between setting a difficult goal or a vague do-your-best goal looks analogous to the choice between cooperating or defecting upon one's future selves. Defection here means that the work involved in preparing for a particular end is handed off to tomorrow's self. Why is this a defection? Because the setting of the goal itself involves some initial energy, and at least for the span of time it takes to articulate the goal, other activities, possibly more pleasurable, must be foregone.

To complete the analogy, consider how the future self might review the same task. Recall that a goal works at least in part via the explicit direction of attention. The future self is in a symmetrically identical position. Either the goal can be attended to, or some other activity can become the focus of attention. And again, the opportunity to indulge in consuming pleasure now, leaving the difficult expenditure of effort for yet another person, can be

alluring. The worst outcome for the past self is to have set a goal [C], and have the later self defect by switching. The initial investment in a cooperative exchange is squandered, leaving the past to reap the lowest possible payoff. The precise equivalence between intertemporal selves, and distinct persons playing simultaneously, begins to fray when pushed at this juncture. In spite of the intriguing analogy, the later self does not necessarily yield a greater payoff by choosing [D] when the earlier self has opted for [C]; it seems rather that [D] has a constant payoff, which is not made greater by the earlier self's choice.

There are several relevant lessons that can be extracted from the way that these conflicts between levels ultimately get resolved in practical settings. First, it is typically the creation of social conventions that is responsible for generating sufficient extra punishment to make C more attractive than D. This is the leitmotif in the standard story of how social norms are thought to have evolved (Coleman, 1990). In particular, ongoing interactions usually lay down social norms; they serve both to punish and to create the obverse of a punishment by creating a shared good. Axelrod (1984), in a summary of his own investigations into how cooperation gains a foothold in the real-world, concluded that "The foundation of cooperation is not really trust, but the durability of the relationship" (p. 182). Indeed, in spite of the emphasis placed on one-shot games in both economic theory and in laboratory experiments, Camerer and Thaler (1995) claim that "subjects in such [one-shot]

experimental settings cannot curb their repeated-game impulses.... [It appears] that subjects cannot accept a situation as being one shot, even when there is \$100 at stake" (p. 215).

The representation of future behavior offers one possible mechanism for transforming what will become past selves, through the relational device of summed expectations. If I monitor the interplay between my current behavior and its impact on the probability of maintaining certain valued activities, I can drive my current self to modify its behavior to align with a consistent image of what my self desires. If I avoid predicting/extrapolating from the current path of my actions, then this provides prima facie evidence that I am engaging in an act of defection (Dupuy, 1998). Consider the case of a smoker who vows repeatedly that this is the "last cigarette." Because his current choice fails to connect in an integrated fashion with his self-conceived future, the current choice exacts an additional toll. There is a concomitant loss of self-esteem which must be deflected, since the current decision generates the discouraging realization that the actor must contrive to separate the interests of the present self from those of the future.

Chapter III: Goal-Choice and the Dynamically Constituted Self

The choices made in articulating goals are intimately bound up with a person's conception of who she is, what kinds of decisions fit with her own identity, and what future paths resonate with her current pursuits. Social scientists were first directed to consider this interplay a hundred years ago by William James, in his famous chapter on "The Self" (James, 1890). He noticed that a person may possess as many different selves as there are social relationships of importance. More particularly, he proposed, in a succinct and famous equation, that a man's self esteem is captured by his success divided by his pretensions. Thus, self-esteem can be boosted either by increasing success or by decreasing pretension. In James's original example, he claimed that a person may feel no shame whatsoever in being incompetent at reading Attic Greek, so long as the domain does not impinge upon his sense of self-identity.

This idea has recently been returned to center stage by social scientists investigating processes of self-articulation (Markus, 1987; Steele, 1983, 1989; Tesser, 1988). In this work, the integrity of the self is recognized as a temporally dynamic entity. The self is sustained by continually evaluating the fit between its aspirations and achievements within each valued domain. Besides William James' original observation that a domain can be distanced in order to safeguard against the risk of having it undercut the sense of

competence and efficacy, a second aspect has come to the fore. As a consequence of the comparative process, when a domain is threatened, it is possible for the fluid self to respond dynamically by drawing upon resources that inhere in non-threatened domains.

Self-Affirmation Theories

Steele's approach has emphasized the ways that the self responsively integrates experience and information into a coherent and resilient identity. Underlying the logic of these psychic processes is the fact that people are generally motivated to maintain an image of themselves which possesses overall self-integrity -- described by Steele (1988) as a system that "functions to sustain a phenomenal experience of the self -- that is, self-concepts and images of the self, past, present and future -- as having adaptive and moral adequacy, as being competent, good, stable, integrated" (p. 289).

This formulation of the self's processes of dynamic responsiveness can be contrasted with a little-known theory, advanced by the philosopher, Lecky, in a posthumously published monograph, Self-Consistency (1945). In that work, Lecky advanced the idea that people are spontaneously working toward "an organization of values which are felt to be consistent with one another. Behavior expresses the effort to maintain the integrity and unity of the organization.... One source of motivation only, the necessity to maintain the unity of the system, must serve as the universal dynamic principle" (p. 81).

Thus, Lecky asserts that consistency is the overarching motive, whereas Steele's research reveals that integrity of the self is much more fluid, resilient, and fungible than would be the case if people hewed to a strictly point-for-point construal of their identity. Indeed, Steele and Liu (1983) were motivated by the fact that: "if dissonance is rooted in a need for psychological consistency, then self-affirmation -- being unable to resolve or dismiss the still important inconsistency -- should not reduce dissonance" (p. 6)

Steele's research has demonstrated that when the integrity of the self is threatened, one viable response involves an affirmation of non-threatened values; this approach creates options for the self to maintain greater resilience than would be required if a theory of perfect logical consistency (such as Lecky's) were to rule the self, since then the only possible response would be to dis-identify with the threatened domain. In one of the early experiments establishing the paradigm of self-affirmation, Steele and Liu (1983) found that "When considered along with value-affirming images of the self, specific, self-threatening inconsistencies may become tolerable" (p. 18). This line of research contributed significantly to the appreciation that self-resources are organized into a constellation of values which sustain the integrity of the self. Because these resources can reside in autonomous domains, it is possible to maintain a strong, intact self even in the face of a threat to one of the self's important domains, by drawing more deeply upon a non-threatened domain. As a summary of the relevant findings, Steele (1988) reported:

First, after an important self-concept is threatened, an individual's primary self-defensive goal is to affirm the general integrity of the self, not to resolve the particular threat. Second, because of this overriding goal, the motivation to adapt to a specific self-threat of one sort may be overcome by affirmation of the broader self-concept or of an equally important, yet different, aspect of the self-concept, without resolving the provoking threat. (p. 268)

Another stream of related findings draws from Tesser's theory of self-esteem maintenance. Tesser and colleagues (Tesser, 1988; Tesser, Martin, & Cornell, 1996) have advanced a model of dynamically maintained self-esteem that attends closely to the social comparison processes.

When a performance dimension is very important (i.e., relevant to one's self-definition), the self is threatened by comparison to a psychologically close other who is performing well; when a performance is not particularly self-relevant, the self is augmented by basking in the reflected glory of a psychologically close other who is performing well (Tesser, et al., 1996, p. 54).

From this perspective, Tesser has articulated a theory that the multiplicity of self-relevant and socially-comparative factors exist in a state of tension which he has metaphorically labeled the "Self Zoo." His focus on interpersonal comparisons, and the attention directed toward threats from the relative success of peers, constitutes one essential difference from the work of Steele and colleagues. Nevertheless, like Steele's experiments, the studies of Tesser and his colleagues have uncovered analogous dynamic

processes of equilibration, whereby threats in one domain of self-relevance are moderated via attention to other domains that remained unthreatened.

The dynamically maintained self is conceived to be a psychological locus that creatively and spontaneously balances and integrates environmental and endogenous challenges by re-strengthening its identification with some domains, while simultaneously withdrawing from others, in an effort to maintain its overall integrity. This perspective directs us toward a new conceptualization of goal-setting. The paradoxes of decision-making underscore the tension between different levels at which to pursue self-interest and self-maintenance. In this light, it seems that the articulation of goals which deepen one's engagement in central life pursuits must strike a balance between self-threats and ambitions. Cooperation in prisoner's dilemma-like games was seen to emerge via the transformation of one-shot interactions into relationships. Relationships draw off a reservoir of trust, based on the expectation that there will be opportunities for repeated interactions.

Analogously, it may be possible for the self to draw upon a fund of resources through the process of its own dynamic process of identification. By internally deploying such resources, the temptation to defect can be reduced. Rather than fleeing from a difficult, daunting task (the articulation of important life goals), the self can first focus upon an activity which increases its own resilience. The proof that such an activity of self-affirmation has been

effective will then come directly from evidence that the self has an increased capacity to articulate its most important goals. And although formulating goals will not single-handedly guarantee their successful execution, the person who manages to formulate explicit challenging goals will be able to draw upon all the cognitive and motivational assistance that goals generate.

Chapter IV: Experiment I

Experiment I posed two central questions. First, the study aimed to demonstrate the existence of the Delmore Effect, i.e., to test whether it is generally true that goal articulation is greater for less important domains than it is for more important domains. Second, the study also sought to test the hypothesis that a self-affirmation manipulation would reduce the severity of the Delmore Effect.

In particular, Experiment I involved one between-participants manipulation (Family Affirmation/No Family Affirmation) and one within-participants condition (Goals in the Top-ranked Domain versus Goals in the Fourth-ranked Domain). All participants filled out the Goal Inventory Questionnaire [see Appendix A]. One group of participants completed the GIQ without writing an initial affirmation, while another group first wrote a brief self-affirmation, an essay recalling the family member they felt had been most supportive. This affirmation technique resembled that employed by Steele and Liu (1983). The particular topic of this affirmation was chosen based upon pilot data, in which family contact had proved the single most significant domain for the college population under study.

The dependent variable of greatest interest was the relative number of goals that participants articulated in two domains (i.e., their top-ranked and fourth-ranked domains). The decision to use goal-counts as a proxy for

explicitness was motivated by several considerations. As will be made clear in an exposition of the data, the results demonstrated that the number of goals was equivalent across all domains, suggesting that it was legitimate to use this quantitative index for purposes of comparing participants' goals even when they had ranked distinct domains as most important.

Doubts about the appropriateness of this index were further resolved by the collection of additional data which explored possible confounds. This served to demonstrate that the various goal domains were also essentially comparable when analyzed in terms of specificity, articulation, and other more qualitative aspects such as the degree of perceived challenge, on which the various domains might be thought to have differed.

Method

Participants

Participants were drawn from the Stanford undergraduates enrolled in Introductory Psychology. The students ($N = 67$) ranged in age from 17 to 22 years old. Twenty of the participants were female, 44 were male, and 3 did not indicate their gender in the demographic data. Seven participants were African-American, 11 Asian-American, 36 Caucasian, and 13 Unlisted/Other. All participants received one half hour of Psychology 1 credit for participation.

General Procedure

Participants were asked to complete a 10-page questionnaire called the Goal Inventory Questionnaire. The individual experimental sessions took place in laboratory rooms furnished with only a chair and a writing table. All students were informed at the outset that the questionnaire would ask them to describe their long-term goals. They were assured of anonymity, were told that no deception was involved in the study's design, and were further informed that the questions required "about a half hour" to complete. When finished, participants exited the room, gave the questionnaire to a research assistant. They were then debriefed and received a signature to assure them of one half hour of Psychology 1 credit.

Materials: The Goal Inventory Questionnaire

The first page of the Goal Inventory Questionnaire asked participants to rank their top four domains out of nine listed options. The nine alternatives from which participants selected their priorities had been developed to cover all of the categories that students had mentioned in previous pilot studies, and closely reflected the inventory of goals collected by other researchers (see the review in Austin and Vancouver, 1996). Participants were also offered the option of adding any "Other" domain of personal importance, for those

situations where participants valued a domain that they personally felt was not included in the nine listed domains.

The exact list of domains, and the particular instructions, are given below:

Please rank the top four domains in terms of their relative importance to you: [Write a 1 beside the Most important, 2 next to the 2nd most, etc.]

- _____ Career preparation
- _____ Friendships
- _____ Academic success
- _____ Economic well-being/wealth
- _____ Romantic relationship
- _____ Family contact
- _____ Physical fitness
- _____ Intellectual growth (outside of school)
- _____ Spiritual life
- _____ Other; Please specify:

After ranking the top four domains of greatest personal importance, all participants turned to the next page, where they were prompted to engage in an exercise that asked them to explicitly enumerate their long-term goals for both their fourth-ranked and their top-ranked domains. Participants answered detailed questions about the domain they had personally ranked first (i.e., as most important) and the domain they had listed as fourth in importance. Separate pages were devoted to prompting the participants to list goals for both of these domains.

A comparison of the number of goals listed for these two domains, then, provides a quantitative measure of the Delmore Effect. Recall that the Delmore Effect is operationalized here as listing a greater number of goals for one's lower-priority domain than for one's top priority.

The questions required participants to describe in detail their plans for the relevant domain. Some of the specific instructions are quoted below [see Appendix A for the complete instructions]:

This part of the questionnaire involves taking the goal you have just listed, and now elaborating your own assessment of the steps that are involved in achieving that goal... Restate the above goal, but try to be as explicit as possible about the actual steps you intend to take in achieving this goal.

Affirmation Manipulation

In order to test the effect of self-affirmation on the Delmore Effect, one group (N = 43) filled out the questionnaire without writing an affirmation essay. A second group (N = 24), before completing the GIQ, first wrote a brief affirmation essay according to the following instructions:

Call to mind the family member who provides the most support and guidance for you. Keeping this person in mind, write a brief [3 to 5 minute] essay on this page about the ways in which they are supportive and helpful in guiding you. Try to recall vivid instances where they have encouraged, inspired or helped you to make your way in the world.

Immediately after writing this affirmation essay, the affirmation participants turned the page, and proceeded to fill out the same Goal Inventory Questionnaire that the control participants had completed without writing an initial affirmation.

Results

The central aims in Experiment I are twofold. First, the study aimed to demonstrate the existence of the Delmore Effect. This would mean that goal articulation would be greater for less important domains than for the domain ranked as most important. The second purpose was to see whether an affirmation manipulation would significantly reduce the Delmore Effect. Before turning to these central issues, however, we first examined the effects of gender and ethnicity.

Preliminary Analyses

No significant differences were found in contrasts between the various measures when analyzed by gender or ethnicity. There was also no significant effect of participants' age. This last point is of modest noteworthiness, since it demonstrates that Stanford freshmen revealed themselves to be essentially as articulate in their goals, and tended to choose the same distribution of goal domains as did the seniors.

Goal Counts: The Delmore Effect

Goal counts among the participants ($N = 43$) who did not write the family affirmation essay (the control condition) demonstrated a marginally significant Delmore Effect. The average number of goals for the fourth-ranked domain ($M = 2.60, SD = 1.21$) was higher than the average number of goals for their top-ranked domain ($M = 2.17, SD = 0.99$), $t(40) = 1.81, p = .077$. This, of course, is precisely as predicted, revealing a tendency for people to have more explicit goals for lower priority domains. Means for these goal counts are presented in Figure 3.

Goal Domains

Perhaps the reader may harbor an intuition, however, that some life domains are less amenable to goal-setting than others. Upon first reflection, it may seem reasonable that students would distinguish between the setting of a career goal (a strategic domain par excellence) and the setting of goals in less structured domains, such as interpersonal relationships, both romantic and friendly. Yet, in a questionnaire designed to probe this possibility, students claimed to be as confident about the meaningfulness of goals designed to "develop closer friendships over the next six months" as they did about goals intended to "develop much clearer career goals over the next six months," $t(80) = -1.27$, which is not a significant difference.

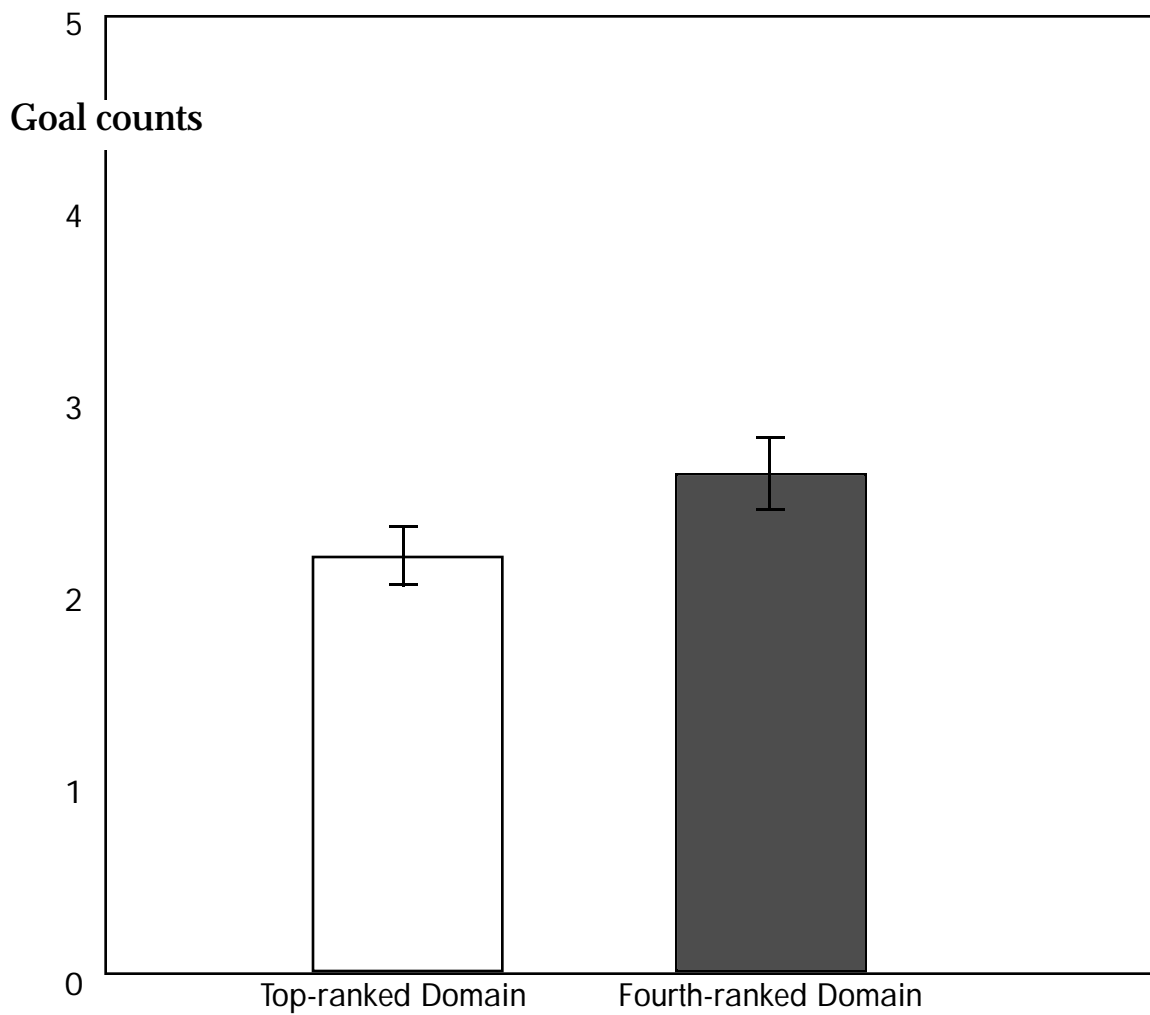
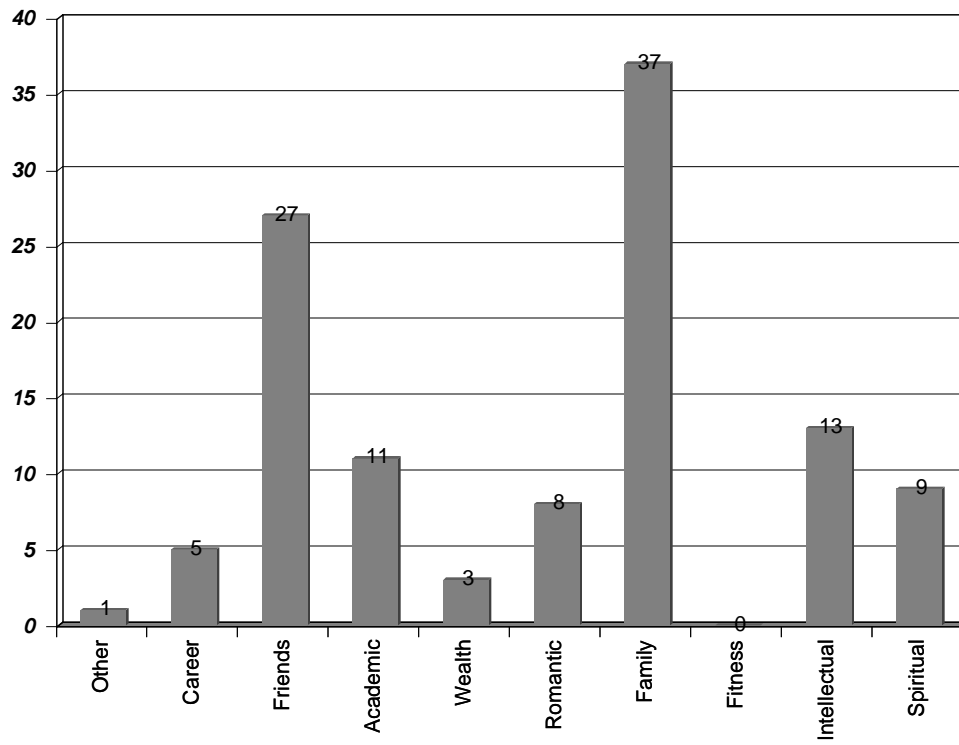


Figure 3. Goal counts (\pm SE) for Participants who Did Not Write an Initial Family Affirmation Essay.

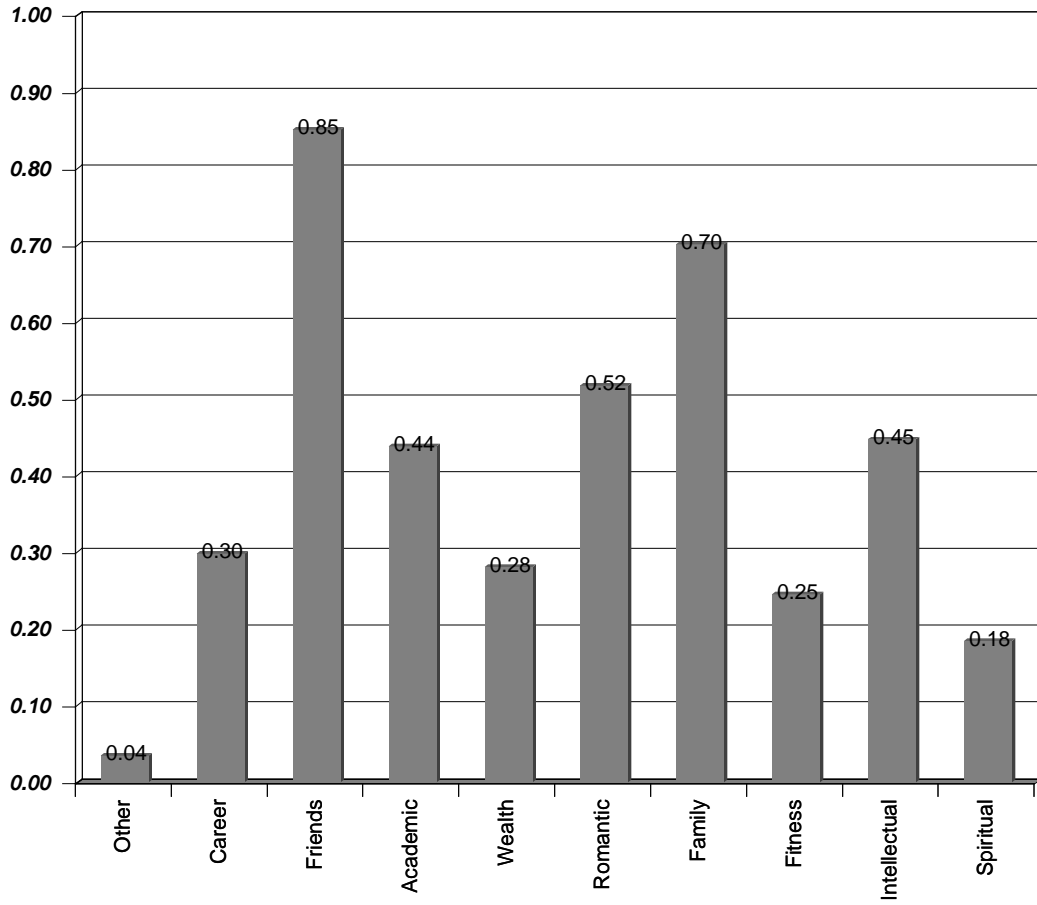
The mean goal counts in all reported experiments showed no major differences in the extent of articulation across the various contrasting domains. Thus, an analysis of variance (ANOVA) on participants' goal counts for the top domain¹ revealed no significant differences, $F(7, 104) = 1.58$, $p > .05$. When a comparable ANOVA was run to evaluate goal counts for the fourth priority domains, the nine distinct goal domains again showed no significant difference $F(8, 104) = 1.20$, $p > .05$. This supports the experimental supposition that it is legitimate to compare goal counts across different domains. Figure 4 illustrates the distribution of the goal domains chosen as top priority by participants.²

In order to see the entire spectrum of participants' choices, and the distribution of rankings, it is helpful to track the cumulative selection of each domain. One can graphically display counts for each time a domain was chosen, without regard for whether the domain was ranked as first, second, third or fourth. Collating the data creates the graph shown in Figure 5, which reveals the percentage of participants who chose to include each of the ten listed domains as one of their four choices.

Top



Cumulative Percent



Effects of Affirmation

Writing a family affirmation essay significantly increased the average number of goals listed for both the fourth-ranked domain ($M = 3.50$, $SD = 1.35$) and the top-ranked domain ($M = 3.08$, $SD = 1.79$), $F(1,63) = 14.16$, $p < .001$ for this overall effect. Unfortunately, as can be seen in Figure 6, this main effect is the only significant source of change. The initial hypothesis, that the experimental manipulation would enable participants to overcome the Delmore Effect, was not supported.

In analyzing the results for this experiment, however, it became evident that one problem undermined a simple interpretation of the effects of the affirmation manipulation. Not all participants were actually affirming a value of the same import. Out of the 24 who wrote the self-affirmation essay, only nine had listed family as their first priority. Clearly, the affirmation procedure would be improved if it were possible to modify the manipulation so as to insure that each participant was in fact affirming the value of central import to the participant's self.

Additional Measures

The Goal Inventory Questionnaire contained additional questions which are not discussed elsewhere, because they did not help to explain the differences among group means. Nevertheless, the lack of explanatory power

of these measures is of some interest, insofar as it rules out certain alternative explanations of the reported data. Participants were asked, for example, to evaluate their own aspiration levels, the inherent difficulty of the domain, and their current level of achievement in both of the domains for which they provided detailed information (i.e., for both their first- and fourth-ranked domains).

Notwithstanding the potential fruitfulness of such queries, there were no significant relationships between participants' ratings on these measures and goal articulation in the relevant domains. This suggests that the differences were therefore not due to some factor related to the intrinsic quality of the domain, either in terms of its estimated difficulty or in terms of the ease with which participants were able to write in detail about that domain.

Discussion

The most important finding from Experiment I is a demonstration of the Delmore Effect. The goal counts of the participants in both conditions reflected the hypothesized tendency to generate more goals in the domain of lower import. Indeed, this tendency was so robust that the gap for both the control and affirmation conditions was essentially the same. The robustness of the effect is made more clear when one groups both conditions, and considers the aggregated sample's tendency to neglect their most important priorities. Participants' top priority goal count ($\underline{M} = 2.50$, $\underline{SD} = 1.40$) was lower

than the average number of goals reported for their fourth priority domain

(M = 2.94, SD = 1.33), t(64) = 1.91, p = .061.

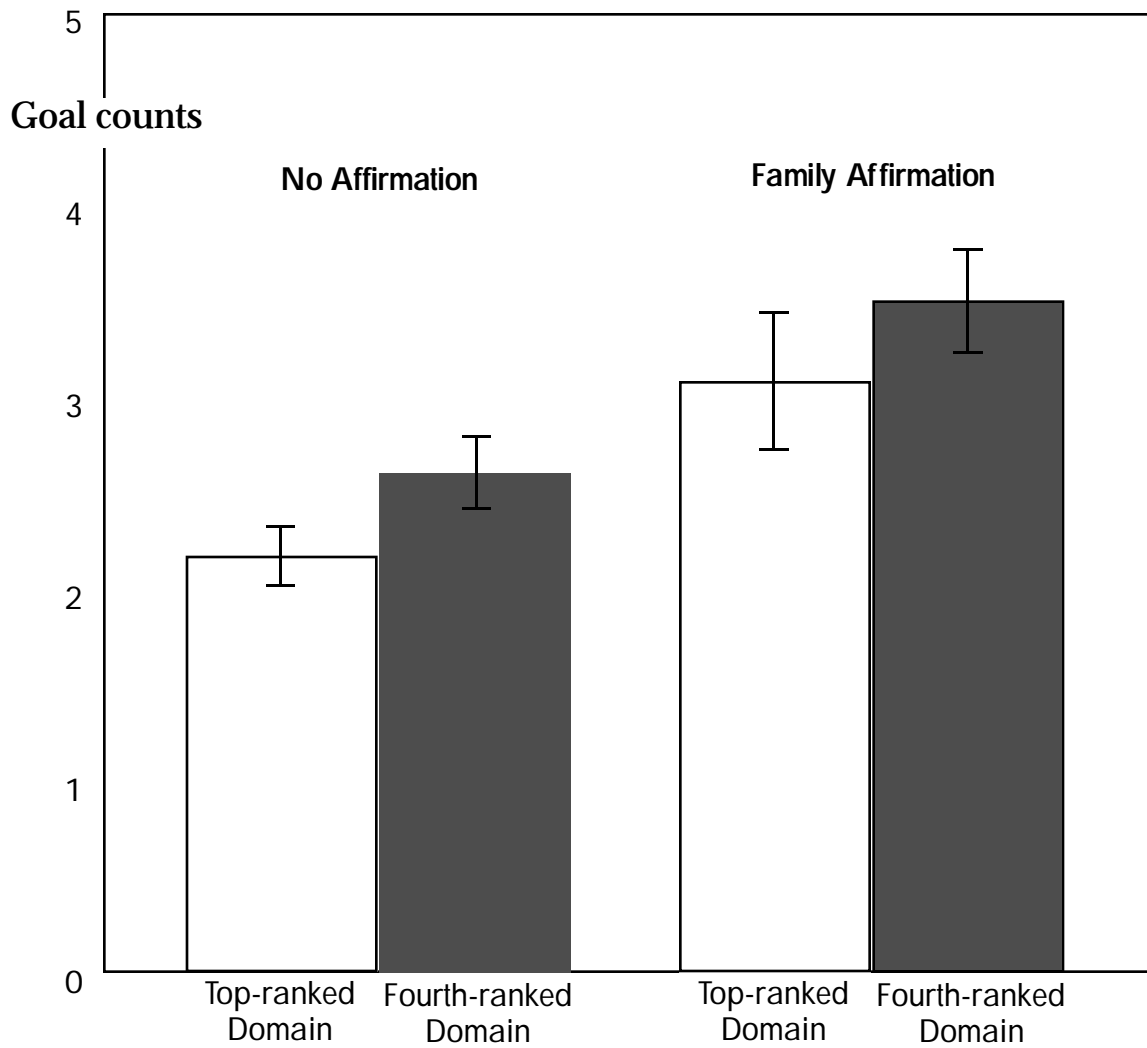


Figure 6. Goal counts (\pm SE) for participants who wrote an initial family affirmation essay in Experiment I, contrasted with the control condition means.

Chapter V: Experiment II

Because the family-focused affirmation manipulation in Experiment I may not have had the same degree of relevance for all participants, Experiment II sought to replicate the first study with an affirmation procedure that instructed participants to write a brief self-affirmation essay about their own value of greatest importance. It was, of course, hoped that this more focused affirmation would be effective in mobilizing additional self-resources, which would be evidenced by a significant diminution of the Delmore Effect.

Note that no control condition was run in this experiment. It was felt that the control condition in Experiment I had demonstrated the existence of the Delmore Effect when no affirmation essay was used. This experiment instead concentrated on refining the affirmation manipulation.

Method

Participants

Participants were drawn from the same pool of Stanford students enrolled in the same Introductory Psychology course as in Experiment I. The participants (N = 47) again ranged in age from 17 to 22 years old. Eighteen of the participants were female, nineteen participants were male, and ten participants did not indicate their gender in the demographic data. Two of the participants were African-American, 6 Asian-American, 23 Caucasian,

and 16 Unlisted/Other. All participants were offered one half hour of Psychology 1 credit.

Procedure

Students were asked to complete the same Goal Inventory Questionnaire, in the same fashion as in Experiment I. In all respects except the manipulation, the procedure was the same as in the previous study. All students were informed at the outset that the questionnaire asked them to describe their long-term goals. They were assured of anonymity, and were also told that no deception was involved in the design of the study. Each person completed the questionnaire privately. When finished, participants exited the room, gave the questionnaire to a research assistant, were debriefed and then received one half hour of Psychology 1 credit.

Affirmation Manipulation

The essential modification in this experimental condition concerned a new affirmation manipulation. This time, the Goal Inventory Questionnaire was preceded by instructions evoking values central to the participant's identity and sense of self. Specifically, the instructions were:

Call to mind an occasion where you did something that you felt was an important accomplishment. The following would be examples: A time where you stood up for an important value; An occasion where you fully expressed yourself; Something you did

that got you into Stanford. Write a brief [3 to 5 minute] essay on this page about what you accomplished. Please try to focus especially on how this affirmed values central to your own identity and sense of yourself.

Immediately after writing this affirmation essay, participants turned the page, and proceeded to complete the 10-page GIQ.

Results

The central question in Experiment II is straightforward: What impact does the affirmation have upon the Delmore Effect? At the outset, we briefly assured ourselves that the effects of gender and ethnicity were not important to the analysis.

Preliminary Analyses

As in the prior experiment, there were no significant differences found in contrasts between the various measures when analyzed by ethnicity and gender. Additionally, there was no significant effect of participants' age.

Goal Counts

Overall, the average number of goals for the participants' fourth-ranked domain ($M = 3.45$, $SD = 1.80$) was once again higher than the average number of goals for their top-ranked domain ($M = 2.55$, $SD = 1.38$), $t(46) = 3.15$, $p < .05$, as displayed in Figure 7. This result further establishes the robustness of the

Delmore Effect. Nevertheless, the absence of any significant interaction of this effect with condition demonstrates that the affirmation manipulation again failed to reduce the disparity between the mean number of goals for the low-priority and the top-priority domains.

Discussion

The fact that the direct affirmation of one's central values again did not enable participants to avail themselves of greater self-resources ran against the experimental prediction. This failure to overcome the Delmore Effect becomes intelligible if one interprets the response as one that occurred because of the heightening of a standard to which participants aspired. Retrodictively, the result suggests that, for example, the poet Delmore Schwartz may not have been helped by an exhortation to daily confront the magnitude of his esteem for Joyce. Perhaps the affirmation of one's grandest ambitions and values can generate an overly exalted standard, which makes the formulation of plans all the more difficult.

This interpretation accords well with recent experimental results from various laboratories adopting a "new look" at cognitive dissonance (Aronson, Blanton, & Cooper, 1995; Blanton, Cooper, Skurnik, & Aronson, 1997; Cooper, 1999). New studies have revealed that, when people find themselves in situations that undermine their own self-conceptions, they tend to both tacitly and actively avoid exposing themselves to self-relevant information

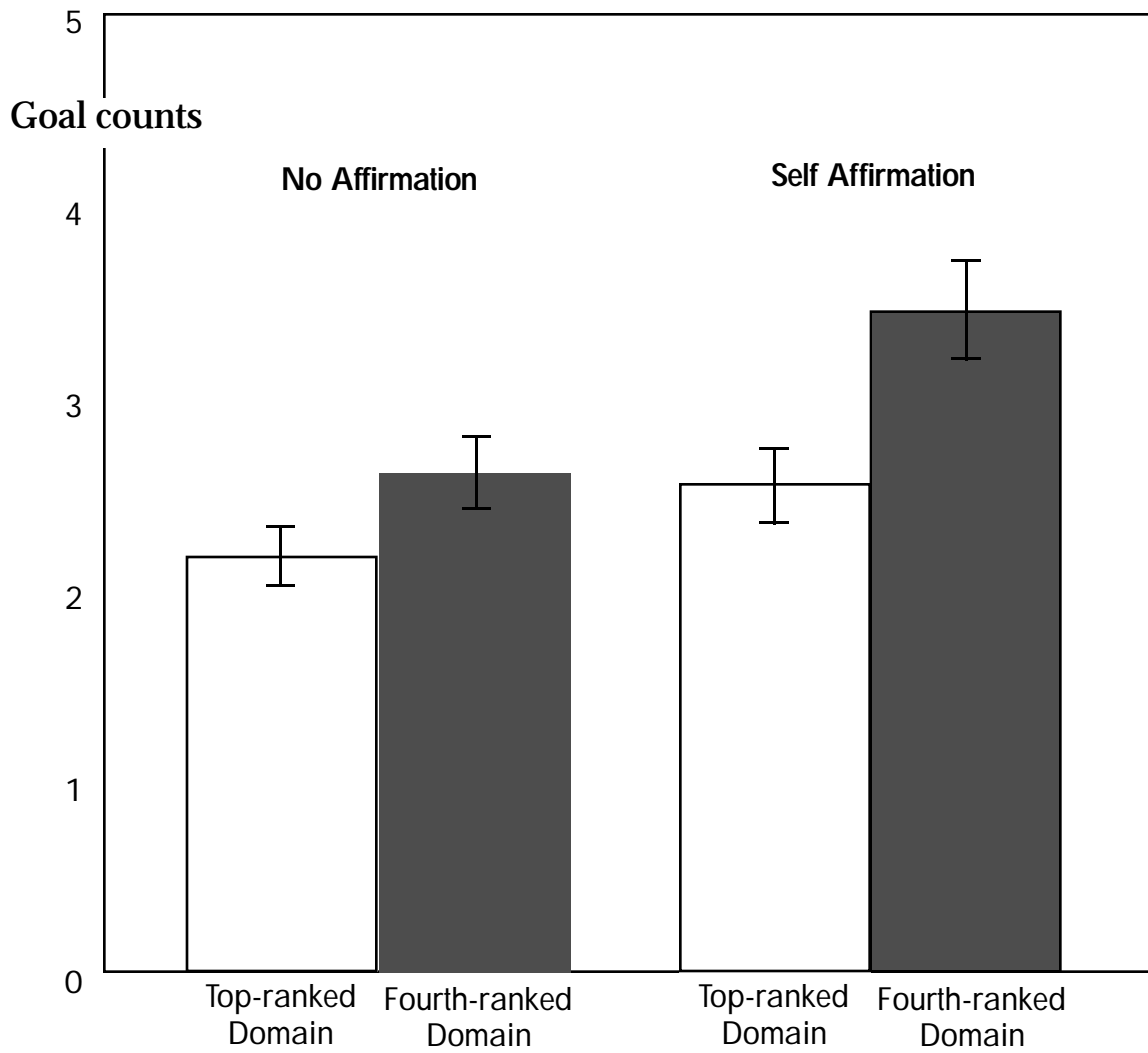


Figure 7. Goal counts (\pm SE) for participants who wrote a self-affirmation essay in Experiment II. Control condition from Experiment I included for purposes of comparison.

which might directly confront the challenged self-concept. This research has demonstrated that, once a pertinent value has been compromised, there are occasions where people seek oblique or tangential affirmations of their own value, rather than pursue more direct strategies of re-equilibration which would require facing the challenged value.

Thus, the literature on cognitive dissonance has shown that in the process of re-equilibrating self-integrity, people do not always prefer to directly confront important values. Such frontal clashes can expose the self to the exacting demands exerted by those values. For example, Blanton et al. (1997) reported that the provision of feedback affirming a threatened value (in this case, that the participant was not compassionate) actually exacerbated, rather than mitigated, the dissonance reaction. Their analysis suggested that:

re-affirming participants' sense of compassion confronted them with the personal standard they had violated in the course of writing their essays. This drew attention to the dissonant aspects of their own behavior and thereby made their action more aversive, which, in turn, increased the magnitude of the dissonance. (p. 690)

Apparently, attempts to direct participants' attention toward values which they consider of central import can engender a heightened sensitivity to the values that are threatened. In such cases, rigidity rather than fluid re-equilibration is likely, and this sort of defense can be shown to exacerbate the dissonant reaction triggered in the experiment. The delicate balance sought here, trying to evoke standards sufficiently relevant to affirm the self, without

unleashing aspirations and values that might prove "too hot to handle," inspired the modified manipulation adopted in Experiment III. Instead of affirming the single-most important domain, it was thought that the affirmation of participants' fourth-ranked domain might still succeed in enhancing self integrity without exacerbating their perceptions of their top values as daunting.

Chapter VI : Experiment III

The final study pursued a long-term follow-up of previous participants. This experiment tested the impact of a refined manipulation, which took into account the difficulties generated by a manipulation which causes overly direct confrontation with the participant's most important value. The design, which involved contacting participants from the previous two experiments, was predicated upon the assumption that domain rankings were sufficiently stable to be used to assign particularized manipulations based on information gathered in previous experiments. This information was used to customize the topic of the individually assigned self-affirmations. Participants were instructed in this experiment to write a brief essay affirming the value they had previously ranked as fourth in importance.

In addition, at the conclusion of this study, it was possible to determine the actual degree of stability in participants' domain rankings over time. The differences in actual stability enabled a further analysis of the data. Those who had in fact affirmed a self-relevant domain were contrasted with those who no longer included the manipulated domain in their current rankings.

Method

Participants

All 114 participants from Experiment I and Experiment II were contacted via e-mail, and offered \$10 for one-half hour of their time to complete another questionnaire. Those who agreed to participate (N = 39) were then given the final questionnaire. Twenty-two of the participants were female, and the remaining 17 were male. The participants were drawn equally from all three of the prior conditions: 14 volunteered from the control condition, 11 from the family-affirmation condition in Experiment I, and the remaining 14 came from the self-affirmation condition in Experiment II.

Procedure

The students filled out a version of the GIQ, preceded by a new customized affirmation. The instructions asked them to write a brief self-affirmation about their most important experience connected with the particular domain they had ranked as fourth in the previous experiment. For example, if participants had ranked career as their fourth priority, they would read the following instructions:

Please call to mind the single most important experience that has supported your preparation for your career. Keeping this experience in mind, write a brief [3 to 5 minute] essay on this page

about the ways in which this has been supportive and helpful in guiding you. Try to recall vivid instances where it has encouraged, inspired or helped you to make your way in the world.

The exact wording of each tailored affirmation can be found in Appendix B.

Results

Experiment III addressed two interesting questions. First, how stable are goal priorities over time? Since participants had filled out the GIQ as much as six months prior to Experiment III, it was possible to compare domain rankings across time. Second, and more central to the motivation for this entire series of experiments: Is it possible that an affirmation of a value oblique to the central concern of the participant would be effective in mobilizing self-resources that would diminish the Delmore Effect?

Preliminary Analyses

As in the preceding two experiments, no significant differences were found in contrasts between the various measures when analyzed by ethnicity, gender, or age. Perhaps a question of more fundamental importance is whether the participants who agreed to participate were different from those who did not consent to participate. When the two groups were contrasted, in terms of focal dependent variables such as goal counts for both the top domain and the fourth domain, there were no significant differences.

Goal Stability

Because of the longitudinal aspect of this experiment, it is possible to assess the extent to which goal-domain rankings were stable over time. Participants in Experiment I and II had participated in the Fall and Winter quarters, and they were re-contacted near the end of Spring quarter. Thus, as much as six months had passed since they had originally supplied information about their goals. Since the original data involved ordinal rankings, one methodological concern is how sensitive such rankings are to slight perturbations. A participant who had essentially the same priorities, but simply switched the relative placement of two of those domains, could superficially appear to have completely different rankings. (For example, contrast the ordered 4-tuple {A, B, C, D} with {B, A, D, C}; the first ordering fails to match the second on every point, in spite of the extensive conservation of relative rankings.) In order to overcome the frailty of such a one-to-one matching, it is more useful to ask whether a domain, once listed as the top priority, is still present at a later time, either in the top, second, third, or fourth ranking.

As can be seen in Table 1, only 54% of the participants preserved the exact same top priority, but fully 82% of the participants included the earlier top-ranked domain within one of the top four domains chosen at the second administration of the GIQ. For the domain originally ranked second, 79% of

the participants included it within their top-four. For the third-ranked domain, 69% of the participants continued to mention it up to six months later.

Note that the trend is toward less stability as we descend in the rankings of the original priority. Because this variability is most apparent at the lower end of the scale, it turns out that the fourth-ranked domain from participants' original questionnaire was only mentioned 49% of the time in the responses provided by those who received the second administration of the GIQ. This interaction between this longitudinal variance and the choice of the domain-topic used as the experimental manipulation will, of course, be addressed in upcoming data analyses.

Goal Counts

Overall, the average number of goals for the participants' fourth-ranked domain ($\underline{M} = 2.64$, $\underline{SD} = 1.46$) was higher than the average number of goals for their top-ranked domain ($\underline{M} = 2.21$, $\underline{SD} = 1.42$), although this difference only achieved marginal statistical significance, $t(38) = 1.73$, $p = .092$. Figure 8 displays the relevant data. We will pursue a more detailed analysis of variance, after we first assess how goal lability may have influenced the personalized manipulations.

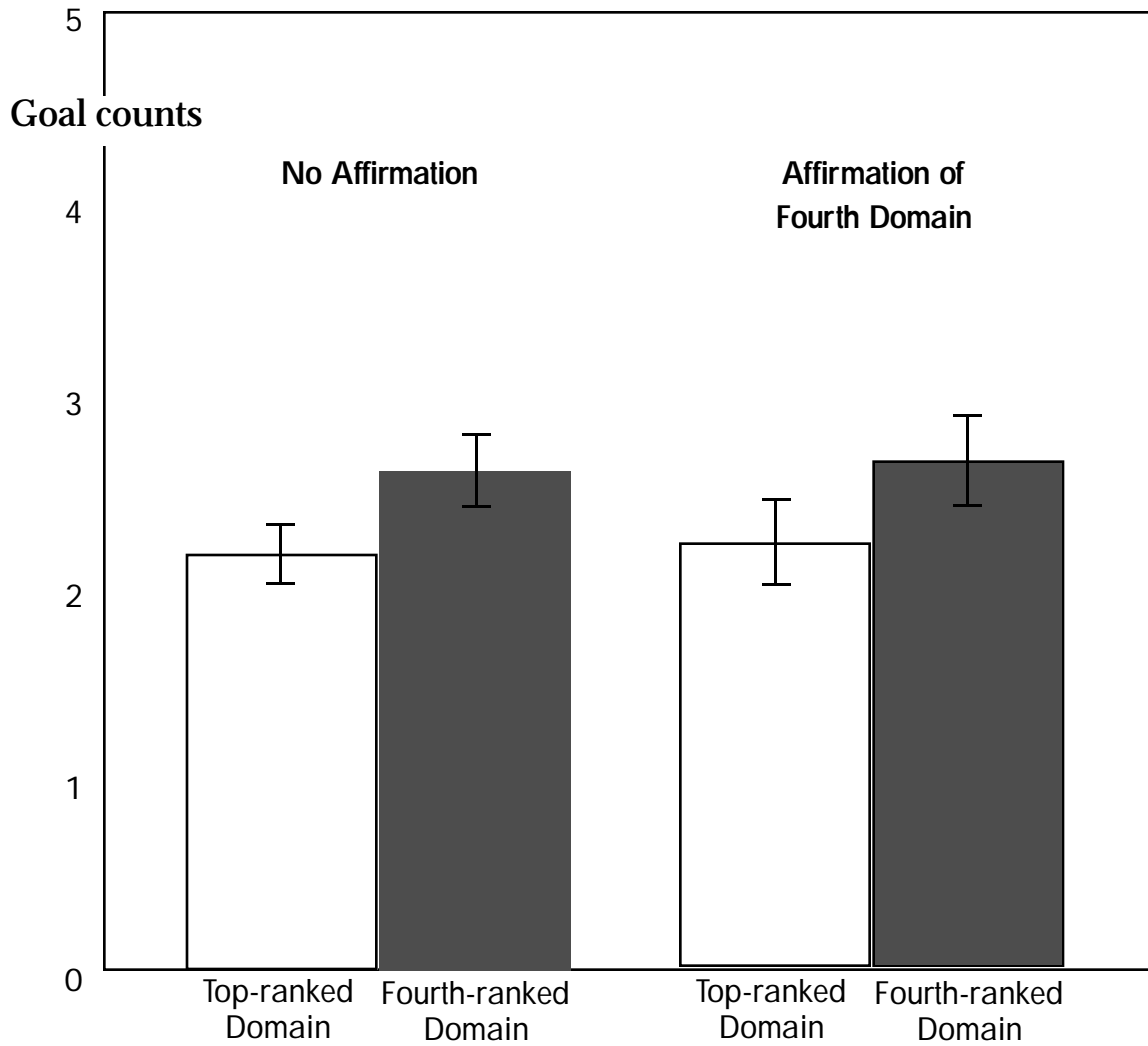


Figure 8. Goal counts (\pm SE) for participants who wrote a self-affirmation essay in Experiment III. Control condition from Experiment I included for purposes of comparison.

	<i>Present in Top Ranking?</i>	<i>Present in Top or Second Ranking?</i>	<i>Present in Top, Second or Third Ranking?</i>	<i>Present in Any of the Top Four Rankings?</i>
Originally Ranked #1	54% (N = 21)	67% (N = 26)	74% (N = 29)	82% (N = 32)
Originally Ranked #2	21% (N = 8)	62% (N = 24)	77% (N = 30)	79% (N = 31)
Originally Ranked #3	10% (N = 4)	28% (N = 11)	38% (N = 15)	69% (N = 27)
Originally Ranked #4	3% (N = 1)	18% (N = 7)	33% (N = 13)	49% (N = 19)

Table 1. Stability of Original Domain Rankings from Initial Experiment to Experiment III.

Because not all participants had retained the same domain-rankings as they had provided in the earlier administration of the GIQ, the original supposition concerning the customization of the manipulation was called into question. Participants can actually be divided into those for whom the manipulation's focal domain was still highly relevant, and those for whom the topic was no longer relevant to their current priorities. Looking at each participant's domain rankings in Experiment III, 19 participants included the domain of the experimental manipulation within their top four goal domains³. The remaining 20 participants failed to list the domain which they had previously ranked fourth. So, these 20 participants were contrasted with the 19 participants for whom the manipulated domain was still relevant to their current life concerns.

An analysis of variance testing whether goal counts differed for the group who affirmed a relevant domain versus those for whom the manipulation was not relevant revealed that positive relevance significantly increased the mean number of goals. Specifically, those for whom the affirmation was relevant articulated as many goals for their top priority domain ($M = 2.89$, $SD = 1.59$) as for their fourth priority goal-domain ($M = 2.89$, $SD = 1.82$). By contrast, those for whom the affirmation was less relevant tended to show the typical Delmore Effect. They had fewer goals in their top priority goal-domain ($M = 1.53$, $SD = 0.77$) than they revealed for their fourth domain ($M =$

2.40, $SD = 0.99$), $F(1, 36) = 3.37$, $p = .083$. Figure 9 graphically displays the relevant data.

Discussion

This final experimental result supports our revised hypothesis, namely that value-relevant affirmations are most powerful when they emanate from the realm of important concerns, but without directly evoking standards that risk unleashing the highly threatening demands that may emerge from explicit value confrontations. It appears possible for the self to connect with its larger constellation of resources, without a frontal clash of the values like the sort described in the experiments of the foregoing section on cognitive dissonance. In such an ideally balanced situation, people appear to be able to successfully mobilize resources of the self. This is demonstrated by the fact that they are more capable of articulating important goals with at least as much explicitness as is typically directed toward less-important priorities.

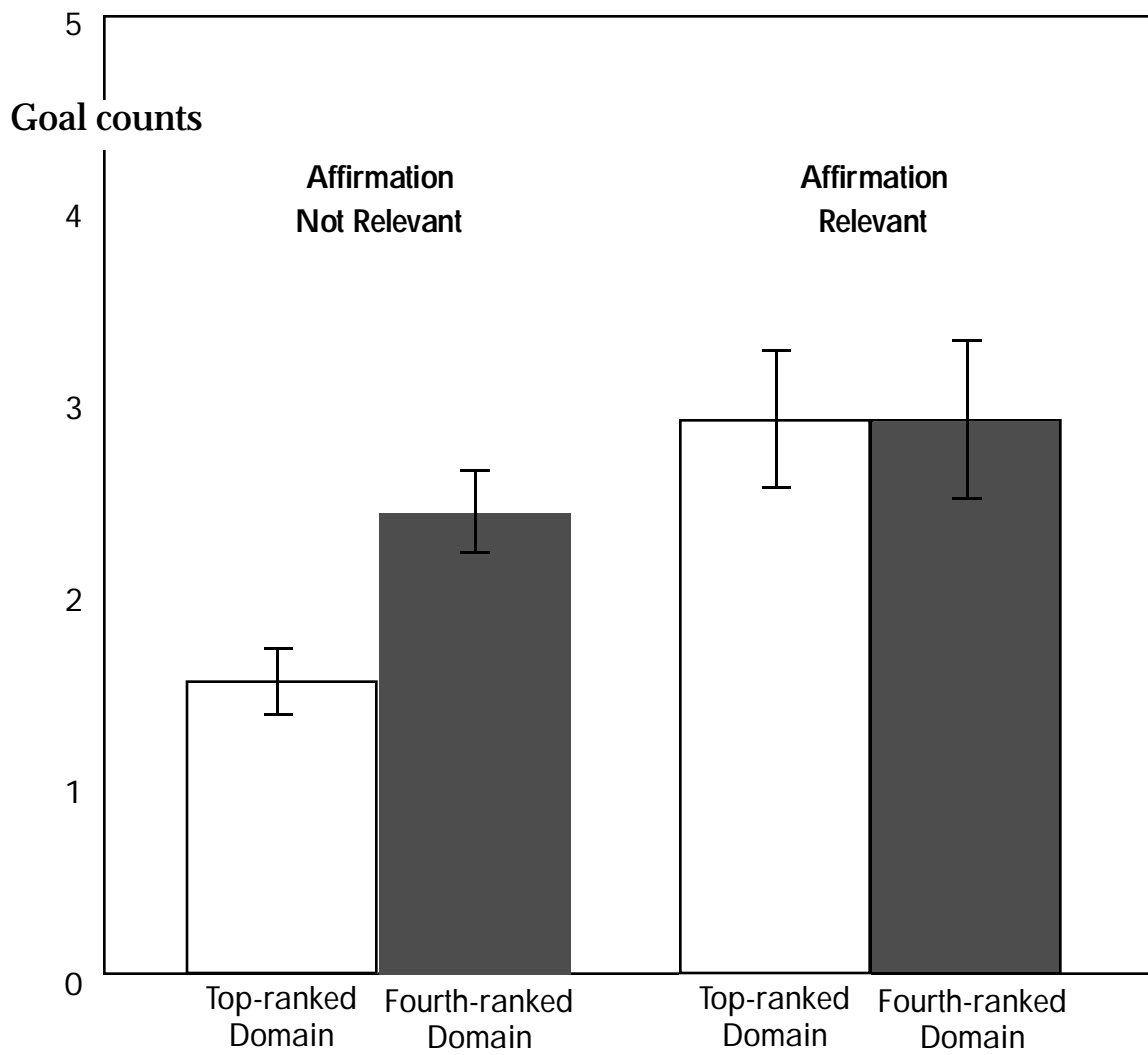


Figure 9. Goal counts (+SE) for participants who wrote a self-affirmation essay in in Experiment III, split by goal-relevance.

Chapter VII: Conclusion

The research presented here has attempted to probe an apparent gap in the literature on goal-setting. In spite of the established efficacy of goals as a practical technique for achieving one's aims, little attention has been given to why people fail to avail themselves of such a useful process. Indeed, such failures often represent the norm rather than the exception.

By analogy, consider the case of a person who has been diagnosed with an illness that is treatable by a simple regime of pills. If the patient fails to take their pills, the medical doctor will report that his (the patient's) symptoms are caused by "non-compliance." But it seems legitimate to then respond, "So where, Doctor, is the pill to make him want to take the pills?" (See Neugeboren, 1997, for a real-world instance of such a problem.) Similarly, the ample research on goal-setting has not been keen to ask: How do we develop a technique to facilitate the wider adoption of the powerful technique of goal-setting?

The present experiments have operated under the guiding assumption that at least one important factor motivating the neglect of explicit goal setting is the way that significant values both inspire and threaten the self. William James eloquently advanced this insight over a hundred years ago, when he sketched the intuitive formulation that a person's self achieves an equilibrated sense of its own worth by balancing pretensions and

achievements. When an experience undercuts one's current self regard, two distinct responses are available: Either redouble one's effort, or alternatively, deflate the threatened domain's degree of relevance to the self.

The connection between this dynamic self-equilibration and the failure to formulate explicit goals in valued domains seems fairly straightforward.

Because of the daunting importance of the domain of highest value, making one's aspirations explicit makes success more accessible but simultaneously exposes the self to the intimidating prospect of failure. The life of Delmore Schwartz provides one spectacular example of a self that poured prodigious talent into relatively low-priority tasks. In honor of his propensity to attend to the second-rate, perhaps as a way of safeguarding his lofty but never-executed ambitions, this tendency has been labeled the Delmore Effect.

Such a strategy of formulating clear plans for the less-important, while leaving the more important for later, was demonstrated to be a problem that did not die with Delmore (1913 - 1966). In all three experiments, participants repeatedly evinced a tendency to formulate more explicit goals for lower priority domains than for their personally most important domain. A range of analyses probed whether this propensity might be explained by alternative factors. Yet, in terms of each domain's degree of intrinsic challenge, its amenability to specificity, and its tendency to afford participants with a sense of accomplishment, there were no significant differences. Further experiments must be carried out to conclusively establish that it is indeed the

threat of high-priority goals that accounts for their relative neglect, although this research provides some support for this hypothesis by the evident positive impact which resulted from appropriate self-affirmations. These self-affirmation essays can liberate resources within the self that may then be mobilized to articulate goals within participants' most valued domains.

The first experiment successfully established the robustness of the Delmore Effect. Nevertheless, the family-oriented affirmation did not materially reduce the gap between participants' fourth-ranked and top-ranked domains. It was felt that perhaps this failure was due to the variable relevance of the affirmation topic. The second experiment eliminated this variability. Each participant was thus instructed to write an affirmation essay concerning the value domain to which they had assigned top ranking. This manipulation required that participants recall their own past accomplishments within this domain. It was hypothesized that this recollection of previous achievement would provide a powerful assistance when they then moved to articulate their future plans in this domain.

The results of this more powerful manipulation were contrary to initial predictions. Clearly this exercise in no way enabled participants to become more articulate about their goals in their most-valued domain. This initially surprising result can perhaps be understood, however, in the context of the "new look" at cognitive dissonance (Aronson, et al., 1995; Blanton, et al., 1997; Cooper, 1999). This line of research has shown that directing attention toward

personal values of central importance can actually cause an increase in rigidity, even a tendency to exaggerate the obligations demanded by the confronted value. With this empirical result in mind, the final experiment attempted to find a value of relevance to the self which would nevertheless avoid a provocative confrontation with the value of greatest import.

Participants, drawn from all previous experimental conditions, were given instructions to affirm the value they had previously ranked as fourth. The interpretation of the resulting data involved one complication introduced by the longitudinal method adopted. Since participants were affirming the value previously ranked as fourth, it was essential to verify that the affirmed value was in fact still relevant. In fact, the assessment of domain stability revealed that only half the participants continued to include among their top four rankings the (manipulated) domain, i.e., the domain they had ranked fourth in their previous experimental session.

Significantly, a contrast of those participants who were affirming a relevant value with those who were not affirming a currently relevant value revealed, for the first and only time in any experimental condition, a diminution of the Delmore Effect. Thus, those participants who affirmed a relevant value, one that would presumably be within the constellation of their self-concerns but not at the top, articulated their highest priority goals to at least as great an extent as they articulated their lower-priority goals. That this was not simply due to a distraction from the confrontation with their core values is suggested

by the failure of the contrasting group. This latter group wrote a self-affirmation essay about a domain that was no longer relevant, and they did not show a reduction in the Delmore Effect.

How might these experiments be summarized to the lay community?

Often, a goal is described as a guiding light, a distant star by which to navigate through life. If we adopt that image, there is an interesting echo between the results from Experiment III and the method astronomers use to find a faint star. One cannot discern the most subtle images by looking straight at the source of a star's light. The eye's fovea (while it provides the most vivid and colorful information) is not as sensitive as one's peripheral vision for discriminating faint black and white signals. Astronomers know to look slightly away from the point at which they expect to locate a star.

Analogously, when a person aims to most clearly articulate her own guiding goals, she might be more successful by calling to mind the values which are peripherally related and supportive of her complete self. Instead of directly confronting the value of greatest import, she might find herself more articulate about the structure of her central life goals by taking a slightly less direct approach.

While these results are the fruit of experiments, it is amusing to note parallels identified in the less empirically grounded work of a mathematician and a philosopher. The mathematician Polya advised his students: "If there's a difficult problem you cannot solve, there's probably a less difficult problem

you also cannot solve." (1957). Polya's attempt to generate heuristics for problem-solving has of course been of long-standing interest to non-mathematicians. His insight explains the fecundity of "toy problems" (e.g., the single hydrogen atom universe studied in quantum mechanics) in illuminating the far more complex world. In one sense, Polya's maxim suggests that psychologists might occasionally look to the less complex behavior of other animals in order to gain insight into humans. The social organization of chimpanzees, e.g., offers a breath-taking window on human behavior (see de Waal, 1989; Goodall, 1986). While it may be difficult to persuade chimpanzees to enroll in Introductory Psychology courses, the male chimpanzees' ceaseless striving to improve their status in the troop hierarchy, as well as the species' sustained attention to reciprocal alliances, directed my own research toward the significance of long-term planning.

Another parallel of this experimental research might be found in the philosophical intuition of Perry's (1995) note on Structured Procrastination. He despairs of ever being able to make headway on his top priority:

Procrastinators often follow exactly the wrong tack. They try to minimize their commitments, assuming that if they have only a few things to do, they will quit procrastinating and get them done. But this goes contrary to the basic nature of the procrastinator and destroys his most important source of motivation. The few tasks on his list will be by definition the most important, and the only way to avoid doing them will be to do nothing. This is a way to

become a couch potato, not an effective human being.
(<http://www-csli.stanford.edu/%7Ejohn/procrastination.html>)

He concludes that the inevitable impulse to procrastinate can be finessed so that one's evasion of the most important task will still direct the flow of attention and effort toward valuable projects. As an answer to the ultimate question, "How about the important tasks at the top of the list, that one never does?" Perry counsels his readers to pursue academic careers, where there is an abundance of seemingly important tasks with artificially strict deadlines.

Rather than despair, or engage in crafty acts of self-deception, it is possible to rely upon the power of goal-setting to boost one's ultimate accomplishment. In order to insure that the goals that get set are truly about the activities one most wishes to work upon, it is essential that one approach the daunting task with sufficient care. The capacity to direct our own energies depends vitally upon articulating clear goals. This process can best be supported by initially attending to the constellation of supporting values which generate a resilient sense of self. By tacking carefully, and first affirming related values that do not confront the self with the most daunting standards implicit in one's aspirations, the goals that are most important can be more clearly and articulately developed.

Future directions

The experiments presented here have explored connections between the theory of self-affirmation and the process of goal articulation. They are based upon the supposition that the daunting quality of important goals may prevent their articulation. It would be invaluable to determine whether this process is indeed connected to the participant's sense of anxiety. In order to clarify this link, future experiments might explicitly address this issue through a set of direct manipulation checks. Measures of participants' anxiety could be evaluated, both before, during, and after the experimental manipulation. Moreover, if the Delmore Effect is in fact due to anxiety, distinct interventions that directly reduce anxiety, without affirming the self, could further clarify the emotional underpinnings of the goal-articulation process.

More elaborate experimental designs could also contribute to deepening the understanding of which processes promote, or interfere, with goal-setting. Different groups could be assigned to affirm one of their four highly ranked domains. It is not certain at this point at what distance from the top-most goal the self-affirmation is best. Conceivably, the second-most important domain would be the most powerful, or there might even be some more complicated relationship connecting the self's integrity to its constellation of highly ranked values.

¹ All participants, for the three experiments, are included to insure sufficient cell sizes to justify an analysis of variance. Only 8 distinct levels were evaluated in this ANOVA, since no one chose "Fitness" as their top-priority.

² Figures 4 and 5 include all participants from all experiments, although the pattern is essentially unchanged if only participants in Experiment I are displayed.

³ We note in passing that only one person had shifted his previously fourth-ranked domain into the top position. This is relevant only insofar as the act of affirming one's top-most domain might trigger the sort of dissonance reactions which were thought to explain the results of Experiment II. (Unfortunately, the sample size precluded any further internal statistical analysis. It would be interesting to test whether participants who affirmed their top-most domain would replicate the results of Experiment II.)

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Appendix A: The Goal Inventory Questionnaire

Please rank the top four domains in terms of their relative importance to you: [Write a 1 beside the Most important, 2 next to the 2nd most, etc.]

_____ Career preparation

_____ Friendships

_____ Academic success

_____ Economic well-being/wealth

_____ Romantic Relationship

_____ Family Contact

_____ Physical fitness

_____ Intellectual growth (outside of school)

_____ Spiritual Life

_____ Other; Please specify:

Write the name of the domain you ranked fourth here:

What goal(s) do you have for the above-named domain?

Relative to your classmates at Stanford, how would you evaluate your aspiration level here?
(That is, how high are your aims in this domain?)

Aim to be in the top 1%			Aim to be at least as good as average			Aim to get by (Avoid bottom 10%)
7	6	5	4	3	2	1

How well would you say you are currently doing in the above-named domain?

Am already doing my best in every way			Could be doing somewhat better			Need to do much better than now
7	6	5	4	3	2	1

Do your aspirations in the above-named domain ever cause you stress?

Causes me stress Daily			Causes me stress Occasionally			Never Causes me stress
7	6	5	4	3	2	1

This part of the questionnaire involves taking the goal(s) you have just listed *concerning the domain you ranked fourth* , and now elaborating your own assessment of the steps that are involved in achieving that goal.

Step I. Restate the above goal, but try to be as explicit as possible about the actual steps you intend to take in achieving this goal. If you have not done so already, indicate how you could measure your progress toward this goal within specific time lines (e.g., at the present, then over the next 3 months, 6 months, and year):

Write the name of the domain you ranked first here:

What goal(s) do you have for the above-named domain?

Relative to your classmates at Stanford, how would you evaluate your aspiration level here?
(That is, how high are your aims in this domain?)

Aim to be in the top 1%			Aim to be at least as good as average			Aim to get by (Avoid bottom 10%)
7	6	5	4	3	2	1

How well would you say you are currently doing in the above-named domain?

Am already doing my best in every way			Could be doing somewhat better			Need to do much better than now
7	6	5	4	3	2	1

Do your aspirations in the above-named domain ever cause you stress?

Causes me stress Daily			Causes me stress Occasionally			Never Causes me stress
7	6	5	4	3	2	1

This part of the questionnaire involves taking the goal(s) you have just listed *concerning the domain you ranked first* , and now elaborating your own assessment of the steps that are involved in achieving that goal.

Step I. Restate the above goal, but try to be as explicit as possible about the actual steps you intend to take in achieving this goal. If you have not done so already, indicate how you could measure your progress toward this goal within specific time lines (e.g., at the present, then over the next 3 months, 6 months, and year):

Final Part of the Questionnaire:

1. How often do you engage in exercises that involve formulating your goals?

Frequently (At least once a week)			Occasionally (At least once a year)			Never
1	2	3	4	5	6	7

2. How frequently do you end up specifying sub-steps as you did in this exercise?

Frequently (At least once a week)			Occasionally (At least once a year)			Never
1	2	3	4	5	6	7

3. How enjoyable was this exercise?

Extremely Enjoyable			Indifferent			Extremely Disagreeable
1	2	3	4	5	6	7

4. How important is it to you to be a good cook? (Not hypothetically)

Extremely Important			Indifferent			Completely Irrelevant to Me
1	2	3	4	5	6	7

5. Would you be interested in being contacted, by email, in a follow-up questionnaire? If “Yes”, please give us your email address here:

_____@leland

THANK YOU. This completes this experiment.

Appendix B: Complete List of Manipulations for Experiment III

Please call to mind the single most important experience that has supported your preparation for your career. Keeping this experience in mind, write a brief [3 to 5 minute] essay on this page about the ways in which this has been supportive and helpful in guiding you. Try to recall vivid instances where it has encouraged, inspired or helped you to make your way in the world.

Please call to mind the person who is the single closest friend of yours, which in this case means the person who provides the most support and guidance for you. Keeping in mind this friend, write a brief [3 to 5 minute] essay on this page about the ways in which they are supportive and helpful in guiding you. Try to recall vivid instances where they have encouraged, inspired or helped you to make your way in the world.

Please call to mind the single most important experience that has supported your academic development. Keeping this experience in mind, write a brief [3 to 5 minute] essay on this page about the ways in which this has been supportive and helpful in guiding you. Try to recall vivid instances where it has encouraged, inspired or helped you to make your way in the world.

Please call to mind the single most important experience that has prepared you to achieve your ambitions for economic well-being. Keeping this experience in mind, write a brief [3 to 5 minute] essay on this page about the ways in which this has been supportive and helpful in guiding you. Try to recall vivid instances where it has encouraged, inspired or helped you to make your way in the world.

Please call to mind the the romantic experience which has provided the most support and guidance for you. you. Keeping in mind this experience, write a brief [3 to 5 minute] essay on this page about the ways in which this was supportive and helpful in guiding you. Try to recall vivid instances where this encouraged, inspired or helped you to make your way in the world.

Please call to mind the person who is the single closest relative of yours, which in this case means the person who provides the most support and guidance for you. Keeping in mind this family member, write a brief [3 to 5 minute] essay on this page about the ways in which they are supportive and helpful in guiding you. Try to recall vivid instances where they have encouraged, inspired or helped you to make your way in the world.

Please call to mind the the athletic experience which has provided the most support and guidance for you. Keeping in mind this experience, write a brief [3 to 5 minute] essay on this page about the ways in which this was supportive and helpful in guiding you. Try to recall vivid instances where this encouraged, inspired or helped you to make your way in the world.

Please call to mind the the intellectual experience which has provided the most support and guidance for you. Keeping in mind this experience, write a brief [3 to 5 minute] essay on this page about the ways in which this was supportive and helpful in guiding you. Try to recall vivid instances where this encouraged, inspired or helped you to make your way in the world.

Please call to mind the the spiritual experience which has provided the most support and guidance for you. Keeping in mind this experience, write a brief [3 to 5 minute] essay on this page about the ways in which this was supportive and helpful in guiding you. Try to recall vivid instances where this encouraged, inspired or helped you to make your way in the world.