Wishful Thinking and Procrastination

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Individual differences in wishful thinking were assessed. Wishful thinking is the extent to which cognitions (e.g, expectations, judgments) are affected by motivations (e.g., desire for an outcome). Participants (N = 64) expected to have to complete a task within a certain time interval. Half the participants expected the task to be pleasant and half expected it to be unpleasant. All were given guidance as to when the task should be started in order to make successful completion of the task probable. The actual time that participants began the task was observed and was the measure of procrastination. High wishful thinkers procrastinated (i.e., they started later than recommended and later than participants in the other conditions) when expecting an unpleasant, but not a pleasant task; low wishful thinkers did not procrastinate. The relationship between wishful thinking and procrastination is discussed.

Surprisingly, it is only in the relatively recent past that procrastination, a common concept in everyday life, has become a more than occasional focus of empirical study. A single consensual definition of the construct has not been agreed upon (Ferrari, Johnson, & McCown, 1995), and we should therefore make clear what we mean by the term. The present conception accepts Silver's (1974) characterization of procrastination as behavior in which an individual delays undertaking a task when that delay reduces the likelihood that the task will be completed successfully. It also comports with Ferrari et al.'s (1995) view that procrastination is maladaptive. For example, if an individual, through delay, decreases the likelihood of the successful completion of an unimportant task in order to carry out a very important task, we would not consider the behavior with respect to the first task to be procrastination. If others believe it is, we would contend that it is procrastination of a

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trivial kind. For a thorough consideration of the definitional issues see Ferrari et al. (1995).

It is probably *because* procrastination is maladaptive that it is so interesting a phenomenon. Why would individuals engage in such behavior? What motivates it? Most research is directed at questions such as these. There are a variety of motives that have been posited to underlie procrastination, and they have varying status. For example, the notion that procrastination may be in the service of self-handicapping (Ferrari, 1991b; 1992a; Lay, Knish, & Zanatta, 1992) may be thought of as situationally specific, or, alternatively, as part of a certain personality type. The common view among many leading procrastination researchers that chronic procrastination exists, reflects a view that individuals procrastinate across situations, but such approaches still seek to identify the motives that are satisfied by the behavior.

The present study had a somewhat different emphasis. The assumption that generally most people do not knowingly and consciously choose to engage in maladaptive behavior leads to the hunch that often procrastinators "believe," at some psychological level, that they will successfully complete the task despite the delay. Such beliefs are "wishful thinking," frequently incorrect. It is hypothesized that individuals differ in the extent to which they think wishfully, and that wishful thinkers are more likely to engage in procrastination because they have, or can generate, unrealistic beliefs about what is required to complete the task.

The research literature in social and cognitive psychology contains ample and long-standing evidence that motivation influences cognition. This idea was discussed by Bartlett (1932), was central in the work on the "new look" in perception (see Allport, 1955), was crucial in cognitive dissonance theory (Festinger, 1957), and is increasingly emphasized in recent treatments of social cognition (e.g., Fiske & Neuberg, 1990; Kruglanski, 1990; Kunda, 1990; Kruglanski & Webster, 1996).

In general terms, motivation seems to affect cognition by biasing information processing toward some desirable state. For example, the need to have cognitive closure, i.e., certainty and clarity (Kruglanski, 1990; Kruglanski & Webster, 1997) may curtail information processing, prompt comparisons with similarly minded others, and foster the rejection of opinion deviates in a group (Kruglanski & Webster, 1991). Similarly, the need for cognition (Cacioppo & Petty, 1982) may result in more elaborate processing of message information and greater preoccupation with such information outside the communication contexts (Haugtvedt & Petty, 1992), in the interest of promoting or prolonging the desired state (or activity) of thinking. Needs for accuracy or "account-

ability" (Fiske & Neuberg, 1990; Tetlock, 1985) have similar effects upon information processing.

Whereas needs for closure, cognition, and accurate judgments of others represent "content-free" motivational effects on cognition, other motivationally-based influences are "content-bound." In these cases, the relevant motivation represents the goal of adopting specific, self-relevant judgments. In fact, most research on the relationship between cognition and motivation belongs in the "content-bound" category: This includes dissonance research showing that judgments are affected by perceived responsibility for negative consequences (Cooper & Fazio, 1984), or by the need to safeguard the individual's self-esteem (Thibodeau & Aronson, 1992); defensive-attribution research (Bradley, 1978; Miller, 1978; Ross & Sicoly, 1978); motivated reasoning research (Kunda, 1990); or work on motivated biases in health-related perceptions (Croyle, 1992) or attitudes (Eagly & Chaiken, 1992). Such research demonstrates clearly that information processing can be biased toward judgments with desirable contents (e.g. esteem-preserving, or punishment-avoiding contents, or contents that portend a relatively carefree future, devoid of severe threats and worries). In short, the research evidence is compatible with the view that persons often engage in "wishful thinking," i.e., they tend to adopt conclusions correspondent to their wishes and to avoid conclusions that are inconsistent with their motivations.

Heretofore, research on content-bound motivational biases on cognition, or on "wishful thinking," has focused predominantly on situationally induced distortions. In other words, it has been hypothesized (and found) that people in general are responsive to the hedonic values of situations, and tend to make biased judgments that are consistent with these situationally determined desires. However, it is possible that individuals differ in the magnitude of their tendency to engage in such distortions. That is, whereas some individuals may aptly be characterized as "wishful thinkers," others may be more nearly "realistic" in their assessments.

We developed an individual difference measure of "wishful thinking"[1] which can distinguish wishful thinkers from realists. Although details of the development of the measure are described elsewhere

[1] The Ways of Coping Checklist (WCCL) derived by Aldrin, Folkman, Shaefer, Coyne, and Lazarus (1980) from Lazarus' transactional model of stress includes a "wishful thinking" subscale. However, that particular measure refers to participants' tendency to wish they could change the situation and it includes items like "Hoped a miracle would happen," "wished I was a stronger person." Thus, far from the present sense of wishful thinking which represents the tendency to subordinate one's judgments to one's desires, the Aldrin et al. (1980) wishful thinking measure actually taps a realistic assessment of (unfortunate) situations, combined with the desire that things be different from what they presently are.

(Sigall, Kruglanski, Stangor, & Fyock, 1997), some central features of our approach deserve mention. The measure was derived from Weinstein's (1980) study of unrealistic optimism. Weinstein asked college students to compare the likelihood that each of 42 life events (e.g., being fired from a job, or gaining statewide recognition in one's profession) would happen to them as opposed to other same-sex students at the college. The results indicated that, overall, there was a very strong tendency for participants to be unrealistically optimistic. Individuals estimated that they would be more likely than others to experience positive life events, and less likely than others to experience negative life events.

In an effort to explain these findings, Weinstein (1982) conducted a second study in which he explored a cognitive basis for the phenomenon. Perhaps, Weinstein reasoned, individuals know what *they* may or will *do* to achieve good outcomes, and avoid bad ones, whereas they can't or don't conjure up similar considerations when they think about others. Thus, in the second study, one group of participants generated lists of factors that would influence the likelihood they would experience certain life events. These estimates were then shown to other participants who were given the same task that had been administered in the first study. Results indicated that unrealistic optimism was reduced somewhat, but not eliminated; even when what others would do was made salient, unrealistic optimism persisted. Thus, a cognitive account does not explain Weinstein's results.

Since one presumably is more motivated to achieve positive outcomes for oneself than to have others achieve positive outcomes, and one is likewise more motivated to avoid negative outcomes for oneself than for others, Weinstein's findings are consistent with the idea that his participants' motivations influenced their likelihood estimates. It will be recalled that we define wishful thinking as cognition affected by the hedonic value of the outcomes, i.e., their positivity or negativity. Therefore what Weinstein labels as unrealistic optimism could, at least in part, represent wishful thinking.

Weinstein did not attend to possible differences among individuals in the extent of wishful thinking. The Wishful Thinking Scale (WTS; Sigall et al., 1997), which was based largely on Weinstein's (1980) questionnaires, allowed us to compute a wishful thinking score for individuals. The score reflects the degree to which they perceive the likelihood of positive events occurring as higher, and of negative events as lower, for themselves compared to others. Sigall et al. (1997) showed that wishful thinking is different than optimism (e.g., Scheier & Carver, 1985), which is a generalized expectancy based largely on history of

success. Optimism is not derived from motivation, although it affects motivation.

Wishful Thinking and Procrastination

Procrastinators, by definition (Silver, 1974) fail to give themselves the time they optimally need to complete their tasks. One way to construe their behavior is that they underestimate the length of time it will take to complete a task (Aitken, 1982; Lay, 1988; McCown, 1986). It is our hypothesis that wishful thinkers, *when motivated to do so*, are more likely than their relatively realistic counterparts (i.e., non-wishful thinkers) to believe that they can complete their tasks more quickly than is normative.

It is clear that procrastination may serve many motives. One, and it is probably simpler than those that are psychodynamic or self-presentational in nature, is avoidance of a task because the task itself is negatively evaluated (Ferrari et al, 1995). From the present perspective, the task (or doing it, or the consequences of engaging in it) does not have to be evaluated negatively in absolute terms; it may be less attractive than an alternative, competing task and, therefore, only relatively negative. It is important also to keep in mind that procrastination is a pertinent concept only when the person recognizes the obligation to do the task: the person believes that ultimately he or she will undertake the job that has been put off. Thus, for example, the student delays studying for the chemistry examination, because she detests chemistry and/or prefers socializing with friends. Whereas she believes that she should begin studying one week prior to it, she procrastinates until the night before the exam.

Wishful thinking may contribute to procrastination because such thinking can be in the service of an individual's excessively sanguine expectations about properly carrying out an assignment. Such expectations facilitate delays by allowing a person to think that the task will be finished even when the shortened time available makes that unlikely. Our chemistry student may postpone studying aided by the wishful belief that she will adequately learn the material in one night, or that the exam will be easy, etc.

All else equal, the more negative one's evaluation of a task, the greater will be the motivation to procrastinate. Since wishful thinkers' beliefs become increasingly optimistic, as the motivation to hold those beliefs increases, we expect high wishful thinkers to procrastinate more than low wishful thinkers, especially when the impending task appears unappealing. This hypothesis was tested in the experiment described below.

METHOD

Participants and Design

Participants were 64 introductory psychology students (32 males, 32 females) at a large state university. Approximately 90% of the participants were Caucasians; all were between 18 and 23 years of age. They earned credit towards a research requirement by participating. Half the participants were high wishful thinkers and the remaining participants were low wishful thinkers.

Participants were asked to begin working on a task at a certain time. At random, half the participants were led to believe that the task was attractive, and the rest that it was unattractive. Thus, the design was a 2 (high/low wishful thinking) × 2 (attractive/unattractive task). Behavioral procrastination, the dependent variable, was measured by observing how long it took for participants to report for work.

Instrument

Sigall et al.'s (1997) Wishful Thinking Scale (WTS), a 25-item scale, was used to assess individual differences in wishful thinking (see Appendix A). Each item refers to a specific life event, and respondents are instructed to consider a given life event and "to indicate 1) how likely it is that the event, as described, will happen to you, and 2) how likely it is that the event will happen to the AVERAGE COLLEGE STUDENT OF YOUR AGE AND SEX." These judgments are each made on 11-point scales (1 = *extremely unlikely*, 11 = extremely *likely*). WTS scores are obtained by subtracting the likelihood estimates for others from the likelihood estimates for self (for the negatively-valenced items, both self and other items are reverse scored before the subtraction). These differences are then summed across the items. The possible range of scores is -250 to +250, the higher the score, the higher the wishful thinking. Were individuals to estimate that events, on the average, were equally likely to occur to the average college student as to themselves, their WTS scores would be zero. In the first sample (n = 59) 20 males; 39 females) tested by Sigall et al. (1997) M = 24.17, SD =17.95. Reliability was acceptable: Cronbach's alpha = .72. WTS scores did not differ by gender. Additional psychometric characteristics of the measure, including means, standard deviations, and reliability information for additional, larger, samples, and the measure's relationship to other individual difference measures may be found in Sigall, et al. (1997). Data from other samples has been similar to those found in the first sample.

Procedure

At the beginning of the semester, 580 introductory psychology students (255 males and 325 females) at a large state university com-

pleted the WTS as part of a battery of instruments. The mean wishful thinking score in this sample was 31.64; SD= 21.63. Cronbach's alpha was .75. Scores did not differ by gender. Those scoring in the highest (48 and above) and lowest (14 and below) quintiles were classified as high and low wishful thinkers, respectively. Six to 12 weeks later, 32 high and 32 low wishful thinkers were recruited by telephone to participate in an experiment that allegedly was investigating memory and comprehension.

Participants reported to the experimental session and were tested individually. All participants were scheduled to arrive on the hour. Upon arrival, the participant was greeted and the experimenter explained that although he was not quite ready to begin the experiment, he wished to describe it briefly. He went on to tell the participant that in the experiment memory and comprehension of material in written reports would be studied. Some participants, the experimenter stated, would read a series of light, fairly interesting personal write-ups, whereas others would read very dull technical reports. All participants would then be asked detailed questions about what they had read.

The experimenter informed participants that he would show them a sample report, so that they would know what kind of material they would be reading. He explained that for reasons of experimental control he could not know the kind of report any given participant would receive, and that therefore the sample would be presented in a randomly drawn sealed envelope. The envelope was presented (the experimenter was in fact blind to the condition), and participants read either a highly personal account of an undergraduate student's infatuation with her English professor (Attractive task condition) or a highly technical review of a new line of tools about to be introduced by a manufacturing company (Unattractive task condition). The experimenter asked participants not to give any indication to him as to the content of the sample. When participants had finished reading, and the report had been replaced in the envelope, the experimenter escorted them to a waiting room.

Once they were in the waiting room, which was located about 15 yards from the laboratory, the experimenter said that while the participant waited he would return to the lab to prepare the materials. The experimenter reported that it took about 30 minutes for most students to complete the task, that occasionally some students needed more time than that, and others less. The experimenter pointed out that it was essential for participants to finish the task within the hour, and that if they failed to do so, credit for participation would not be awarded. The experimenter then directed participants' attention to a videocassette recorder, and said that to keep participants from being bored during the

waiting period, the VCR had been set up with a tape of some comedy performances to watch. We prepared this tape, which ran for about 30 minutes, and had shown it to many individuals prior to using it in the study. There was wide consensus in pilot testing that the performances were very funny and entertaining. This point in the procedure was reached 10 to 15 minutes after the hour, the variability depending primarily on the participant's exact time of arrival. Participants were told that the experimenter would be ready for them in approximately 10 minutes and were instructed to turn off the VCR and return to the experimental room "in about 10 minutes." A wall clock in the waiting room allowed all participants to know the time.

Note that according to information presented by the experimenter, participants who reported in ten minutes could begin their tasks 20 to 25 minutes after the hour, and therefore could expect to complete their assignments 50 to 55 minutes after the hour if they were able to do it in the average time of 30 minutes. We felt that this made time pressure as high as we could without forfeiting credibility; participation credit for this experiment was one credit, meaning that participants' maximum participation time was one hour. In addition, since many students would have classes or other appointments at the top of the next hour, some consideration had to be provided by the experimenter for participants to meet other commitments on time.

The experimenter turned on the VCR, left the waiting room, and started a stop watch as he did so. The time of the participant's subsequent arrival at the laboratory was recorded. The main dependent measure was the time that elapsed between the experimenter's departure from the waiting room and the participant's appearance at the laboratory. Participants were given a questionnaire that assessed their expectations about the task, on an 11-point scale labeled *very interesting* (11) and *very boring* (1) at the endpoints. On another item, participants were reminded that 30 minutes was the average completion time for the task, and they were asked to indicate how long it would take them on a scale labeled *much less than 30 minutes* (1), *thirty minutes* (6), and *much more than 30 minutes* (11). They were also asked to rate their moods in answer to 2 items that asked how they felt, and were followed by response scales labeled *good* (1) and *bad* (11) in one item, and *happy* (1) and *sad* (11) in the other. When these forms had been completed, participants were debriefed.

RESULTS AND DISCUSSION

Manipulation check. Participants in the Attractive Task condition expected the task to be more interesting ($M = 7.16$) than did those in the Unattractive Task condition ($M = 4.53$), $F(1,60) = 13.83$, $p < .001$. Thus

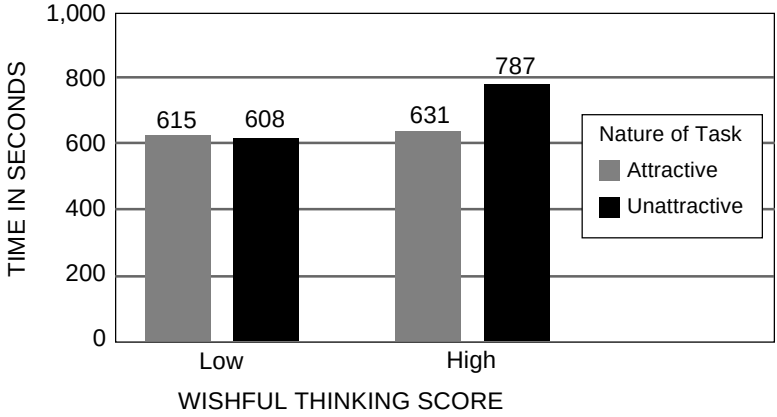

FIGURE 1 Amount of Time to Return to Laboratory to Begin Task

the manipulation had the intended effect. Evaluations of the task did not vary with wishful thinking: $F(1,60) = 1.10$, ns. Nor was there an interaction effect ($F < 1$).

The data on the dependent measure, behavioral procrastination, are summarized in Figure 1. Recall that participants were asked to report back to the lab room in about ten minutes, or 600 seconds.

It will be seen in Figure 1 that except in the High Wishful Thinking-Unattractive Task condition, participants appeared in slightly more than 10 minutes, on the average. However, high wishful thinkers expecting the boring task didn't return for more than 13 minutes. As predicted, the results did show an interaction between wishful thinking and task attractiveness, $F(1,60) = 6.87$, $p = .01$. The difference between high ($M = 787.31$) and low wishful thinkers ($M = 608.31$) in the unattractive task condition was also statistically significant: $F(1,60) = 16.62$, $p < .001$). The interaction effect was the most theoretically important, although we also found significant main effects for wishful thinking, with highs taking more time to report than lows [$F(1,60) = 9.89$, $p < .01$], and task attractiveness, with participants who expected a boring task taking longer than those who expected an interesting one [$F(1,60) = 5.73$, $p = .02$]. There were no differences among conditions for either of the mood measures.

As predicted, when an unattractive task was anticipated, high wishful thinkers delayed starting on it more than low wishful thinkers did,

whereas no such difference was manifested when an attractive task was expected. Wishful thinkers did behaviorally procrastinate when motivated to avoid the task. Since there was a substantial cost to not completing the task, we presumed that wishful thinkers would believe they in fact could finish the task more quickly than others—a belief that would facilitate procrastination. Indeed, on the measure that assessed expectations for how quickly they would complete the task, high wishful thinkers did expect to finish the task more quickly ($M = 5.53$) than did low wishful thinkers ($M = 6.86$); $F(1,56) = p\ 11.10, < .002$. These expectations did not vary with task attractiveness; nor was there an interaction on this measure.

Since procrastination did not differ between high and low wishful thinkers when the task was attractive, it does not appear that wishful thinkers are generally less punctual or that they become more engrossed by comedy. And finally, although this study fails to provide direct evidence for changes in participants' cognitions as a function of motivation—evidence that would be useful to collect in future research, it does provide evidence that is theoretically consistent with our analysis of wishful thinking.

The results of this study have implications for the general topic of motivated reasoning. As noted above, motivated reasoning has traditionally been treated as an invariant feature of social cognition, for example, assuming that everyone is unrealistically optimistic (Weinstein, 1980), or that everyone reduces dissonance. Or, motivated reasoning was assumed to be determined by the situation. The individual differences in motivated reasoning implied by the present results, are interesting in part because they demonstrate how person differences combine with situational factors. Although the mechanisms that underlie wishful thinking have not yet been fully unearthed, recent work by Richter (1997) intimates that the repression of unpleasant material may be involved.

Another aspect of this study is worth consideration. A number of noteworthy and important contributions to the literature have advanced the position that positivity of outlook is generally desirable, and even that positivity that goes considerably beyond what is justified by "reality" is essential to mental health (Taylor, 1989, and Taylor & Brown, 1988). We think that these arguments have merit in a limited way. The notion that a positive outlook is a catalyst that allows certain motivated behaviors to be undertaken to begin with, and that would not be were a bleaker approach in place seems eminently sensible. Yet, it is easy to see how wishful thinking, a positive outlook of a certain kind, can have untoward consequences as well. Chronic procrastination is maladaptive; it is in the words of Sabini and Silver (1982), "a psychopathology of

everyday life" (p. 126). And as Harriott & Ferrari (1996) have reported, it is prevalent among 20% of the normal adult population. The present evidence that wishful thinking is related to procrastination ought, we think, to discourage an unbridled view that a positive outlook leads to good outcomes.

Because much of the research that is directed towards understanding procrastination examines the links between chronic procrastination and other individual difference variables, a fair question would seem to be how wishful thinking relates to some of the same variables that seem to be implicated in procrastination. Although we have not examined this question thoroughly, we have a few findings worth noting. Sigall et al. (1997) have examined the relationship between a host of individual difference measures and the WTS. We have found that wishful thinking is positively related to self-esteem ($r = .31$, $p < .01$; $n = 131$). Studies (e.g., Aitken, 1982; Ferrari, 1991a; Ferrari, 1992b; Solomon & Rothblum, 1984) in which correlations between self-esteem and procrastination have been measured indicate a *negative* relationship between the two, which makes theoretical sense. We suspect that the positive relationship between self-esteem measures and wishful thinking is an artifactual one. Measures of self-esteem such as Rosenberg's ask respondents to make judgments about themselves, and it is rather plausible that the wishful thinkers who desire to see themselves favorably would evaluate themselves in line with their desires. We have also found narcissism and wishful thinking to be related ($r = .24$, $p < .05$; $n = 133$). Although small, this relationship is intriguing because narcissism and procrastination have been found to be related (McCown, 1994). Clearly, we cannot do more than speculate, but to the extent that it reflects individuals' beliefs that they are superior to others and that they are entitled to get what they want, narcissism's possible role in wishful thinking, and therefore in procrastination, makes intuitive sense, and may be worth further examination.

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APPENDIX A

Wishful Thinking Scale Instructions

This booklet contains a list of events or life experiences. We are interested in your estimate of how likely it is that you will experience the event *in the future*. We are also interested in your estimate of how likely it is that others will experience the event *in the future.*

Please read *carefully* each event listed, and answer the questions that accompany it. It will be obvious to you that there are no right or wrong answers. Just respond by indicating what you think.

The specific format is as follows: An event will be given. You will be asked to indicate 1) how likely it is that the event, as described, will happen to you, and 2) how likely it is that the event will happen to the AVERAGE COLLEGE STUDENT OF YOUR AGE AND SEX. Look at the following example.

EVENT: Writing a best-selling book.

YOU: 1 2 3 4 5 6 7 8 9 10 11
extremely unlikely *extremely likely*

OTHER: 1 2 3 4 5 6 7 8 9 10 11
extremely unlikely *extremely likely*

If you think that the chances are quite slim that you'd write a best seller, but that there is a possibility of it, you could indicate that by circling the "2" on the scale alongside "YOU".

If you also think that there is no chance that the average college student of your age and sex will write a best seller, you should circle "1" on the scale alongside "OTHER."

Wishful Thinking Scale Items

[Each item is followed by the response scales shown in the foregoing example]:

1. Get injured in an automobile accident.
2. Marrying someone wealthy.
3. Having a heart attack before age 40.
4. Being fired from a job.
5. Owning your own home.
6. Having a drinking problem.
7. Getting a starting salary of more than $20,000.
8. Being a victim in a mugging.
9. Having a mentally gifted child.
10. Attempting suicide.
11. Personal achievements are described in a newspaper.
12. Developing cancer.
13. In 10 years earning more than $50,000.
14. Being sued by someone.
15. Traveling to Europe.
16. Getting divorced.
17. Being a victim of a burglary.
18. Contracting a venereal disease.
19. Home doubles in value after 5 years.
20. Having a car stolen.
21. Getting a good job offer before graduation.
22. Being sterile.
23. Car turns out to be a lemon.
24. Getting a starting salary of more than $30,000.
25. Work is recognized with an award.