Journal of Personality and Social Psychology

Volume 69(4) October 1995 p 603–610

When Less Is More: Counterfactual Thinking and Satisfaction Among Olympic Medalists

[Attitudes and Social Cognition]

Medvec, Victoria Husted[1]; Madey, Scott F.[2]; Gilovich, Thomas[1,3]

[1]Department of Psychology, Cornell University

[2]Department of Psychology, University of Toledo.

[3]Correspondence concerning this article should be addressed to Thomas Gilovich, Department of Psychology, Uris Hall, Cornell University, Ithaca, New York 14853-7601.

This research was supported in part by grants from the National Institute of Mental Health (MH45531) and the National Science Foundation (SBR9319558).

We would like to thank Todd Bickford, Theresa Buckley, Nancy De Hart, Deborah Fidler, Nina Hattiangadi, Allison Himmelfarb, Elena Jeffries, Danielle Kaplan, Talia Korenbrot, Renae Murphy, Sara Sirlin, and Shane Steele for their help in editing the videotapes and collecting data.

Received Date: January 10, 1994; Revised Date: May 8, 1995; Accepted Date: May 10, 1995

Outline

Graphics

- Figure 1

Abstract

Research on counterfactual thinking has shown that people's emotional responses to events are influenced by their thoughts about "what might have been." The authors extend these findings by documenting a familiar occasion in which those who are objectively better off nonetheless feel worse. In particular, an analysis of the emotional reactions of bronze and silver medalists at the 1992 Summer Olympics—both at the conclusion of their events and on the medal stand—indicates that bronze medalists tend to be happier than silver medalists. The authors attribute these results to the fact that the most compelling counterfactual alternative for the silver medalist is winning the gold, whereas for the bronze medalist it is finishing without a medal. Support for this interpretation was obtained from the 1992 Olympics and the 1994 Empire State Games. The discussion focuses on the implications of endowment and contrast for well being.

So we have the paradox of a man shamed to death because he is only the second pugilist or the second oarsman in the world. That he is able to beat the whole population of the globe minus one is nothing; he has "pitted" himself to beat that one; and as long as he doesn't do that nothing else counts. (James, 1892, p. 186)

James's (1892) observation represents an early statement of a fundamental principle of psychology: A person's objective achievements often matter less than how those accomplishments are subjectively construed. Being one of the best in the world can mean little if it is coded not as a triumph over many, but as a loss to one. Being second best may not be as gratifying as perhaps it should.

Since James's time, of course, this idea has been both theoretically enriched and extensively documented. Social psychologists have shown that people's satisfaction with their objective circumstances is greatly affected by how their own circumstances compare with those of relevant others (Festinger, 1954; Suls & Miller, 1977; Taylor & Lobel, 1989). A 5% merit raise can be quite exhilarating until one learns that the person down the hall received an 8% increase. Psychologists have also demonstrated that satisfaction with an outcome likewise depends on how it compares with a person's original expectations (Atkinson, 1964; Feather, 1967, 1969). Someone who receives a 5% raise might be happier than someone who receives an 8% increase if the former expected less than the latter. Often it is the *difference* between the actual outcome and the expected outcome, or the actual outcome and the outcomes of others, that is decisive (Crosby, 1976; Olson, Herman, & Zanna, 1986).

More recently, psychologists have discovered a third way in which the determinants of satisfaction are relative. In particular, people seem to be greatly affected by how their objective outcomes compare to imagined outcomes that "might have been" (Kahneman & Miller, 1986; Kahneman & Tversky, 1982b; Markman, Gavanski, Sherman, & McMullen, 1993; Miller, Turnbull, & McFarland, 1990; Roese, 1994; Roese & Olson, in press). The intensity of people's reactions to events appears to be proportional to how easy it is to conjure up greater or lesser outcomes that "almost happened." An 8% return on one's investment might exceed expectations and yet be disappointing if one is reminded of an alternative investment one "almost" made that yielded a substantially higher return. The critical comparison in this case is a postcomputed response to what has occurred,

rather than a precomputed representation of what seems likely, *ex ante*, to occur (Kahneman & Miller, 1986).

Most of the research on counterfactual thinking has held outcome constant and examined the reactions of people contemplating different counterfactual alternatives. For example, Kahneman and Tversky (1982b) asked their participants to imagine the reactions of two travellers who both missed their scheduled flights, one by 5 minutes and the other by 30 minutes. The outcome is the same—both must wait for the next flight—but it is easier to imagine a counterfactual world in which the first traveller arrives on time. Studies such as this have repeatedly shown that the same outcome can produce strikingly different reactions as a function of the ease of generating various counterfactual alternatives (Johnson, 1986; Kahneman & Miller, 1986; Kahneman & Tversky, 1982a, 1982b; Miller & McFarland, 1986; Miller et al., 1990; Turnbull, 1981; Wells & Gavanski, 1989).

We wished to take this a step further. We were interested in whether the effects of different counterfactual comparisons are sufficiently strong to cause people who are objectively *worse* off to sometimes feel better than those in a superior state. Moreover, we were interested not just in documenting isolated episodes in which this might happen, but in identifying a specific situation in which it occurs with regularity and predictability. The domain we chose to investigate was athletic competition.

We chose this domain of investigation because in athletic competition outcomes are typically defined with unusual precision. Someone finishes first, second, or third, for example, thereby earning a gold, silver, or bronze medal. With all else equal, one would expect the athletes' levels of satisfaction to mirror this objective order. We suspected, however, that all else is not equal—that the nature of athletes' counterfactual thoughts might cause their levels of satisfaction to depart from this simple, linear order.

Consider the counterfactual thoughts of bronze and silver medalists. What might their most compelling counterfactual thoughts be? One would certainly expect the silver medalist to focus on almost winning the gold because there is a qualitative difference between coming in first and any other outcome. Each event has only one winner, and to that victor belongs the considerable spoils that the modern commercial-athletic world bestows (R. H. Frank & Cook, 1995). Moreover, for the silver medalist, this exalted status was only one step away. To be sure, the silver medalist also finished only one step from winning a bronze, but such a downward social comparison does not involve much of a change in status (i.e., neither the bronze nor silver medalist won the event, but both won medals), and thus does not constitute as much of a counterfactual temptation.

In contrast, bronze medalists are likely to focus their counterfactual thoughts downward. Like the qualitative jump between silver and gold, there is a categorical difference between finishing third and finishing fourth. Third place merits a medal whereas the fourth-place finisher is just one of the field. This type of categorical difference does not exist in the upward comparison between second and third place.

Because of this asymmetry in the direction of counterfactual comparison, the person who is objectively worse off (the bronze medalist) might nonetheless feel more gratified than the person who is objectively better off (the silver medalist). Like William James's (1892) pugilist, silver medalists may torment themselves with counterfactual thoughts of “if only …” or “why didn't I just ….” Bronze medalists, in contrast, may be soothed by the thought that “at least I won a medal.” The net result is that with respect to athletic competition, there may be times when less is more.

We conducted three studies to examine this question. First, we analyzed the affective reactions of bronze and silver medalists as they won their medals in the 1992 Olympic games in Barcelona, Spain. Second, we had participants evaluate the Olympians' postcompetition interviews to see whether silver medalists seemed to be focused on the medal they almost won whereas third-place finishers appeared to relish the pleasure simply of being medalists. In the third study, we asked athletes themselves about the nature of their counterfactual thoughts.

Study 1

We videotaped all of the National Broadcasting Company (NBC) coverage of the 1992 Summer Olympic games in Barcelona, Spain. From this footage, two master tapes were constructed. The first showed the immediate reactions of all bronze and silver medalists that NBC chose to televise at the time the athletes learned how they had finished. Thus, the tape shows Janet Evans as she touched the wall of the pool and discovered she had come in second, and Jackie Joyner-Kersey after she completed her last long jump and earned a bronze medal. The second tape consisted of all bronze and silver medalists whom NBC showed on the medal stand during the award ceremony. For example, this tape shows Matt Biondi receiving a silver medal for his performance in the 50-m freestyle, and the Lithuanian men's basketball team (in uniforms designed by *The Grateful Dead*) after they received their bronze medals.

Each tape was shown to a separate group of participants who were asked to rate the expressed emotion of each athlete. Because of the asymmetry in the likely counterfactual comparisons of the bronze and silver medalists, we expected those who finished third to be demonstrably happier than those who finished second.

Method

Participants.

Twenty Cornell University undergraduates served as participants. Only people who indicated they were uninterested in and uninformed about sports were recruited. This ensured that their ratings would not be affected by any preexisting knowledge about the athletes or their performance in the Olympic games.

Stimulus materials.

The tape of the athletes' immediate reactions included shots of 23 silver and 18 bronze medalists. Not surprisingly, given NBC's main audience, most of these shots (25) were of Americans. To create the master tape, we simply copied all footage of the finish and immediate aftermath of all silver and bronze medal winners. These shots tended to be rather brief (M = 14.4 s; SD = 8.3 s), and we stayed with the scene for as long as NBC did. Because the issue of what footage to include involved minimal judgment, we did the editing ourselves.

This was not the case for the medal stand videotape. Here there were too many editing decisions to be made. Should a shot of the athlete *leaving* the medal stand be included? Should a certain “head and shoulders” shot on the medal stand be included or not? To eliminate the possibility of our expectations guiding these editorial decisions, we turned the job over to someone unaware of our hypothesis. We identified all medal stand shots of second- and third-place finishers in NBC's coverage, and asked our editor to copy those moments that best captured the emotion that the athletes appeared to be feeling. This resulted in a master tape of 20 silver and 15 bronze medal winners. The average length of each shot was 14.7 s, with an SD of

13.8 s. In this case fewer than half of the shots (15) were of American athletes.[1]

Two versions of each tape were created, with the order of presentation of the athletes varied across versions. Blank spaces were inserted between shots of the different athletes to provide participants with time to complete their ratings.

Procedure.

Participants arrived at the laboratory in groups and were told that they would be watching a videotape of athletes from the 1992 Olympic games. They were informed that they were to rate the expressed emotions of each athlete on a 10-point "agony to ecstasy" scale. The participants were first asked to watch a few shots of athletes without making any ratings in order to give them an idea of the range of emotions shown on the tapes. After participants were familiar with the format of the videotape, the rating session commenced.

Five participants rated each version of each of the two videotapes. The tapes were shown without sound to eliminate the chance that commentators' remarks might affect their evaluations of the athletes' expressed emotions. A 1.5-inch (3.8 cm) strip of paper was affixed to the bottom of the video screen to occlude various graphics used by NBC to indicate the athlete's order of finish.

Results

Participants' ratings were highly reliable, for both the immediate-reactions videotape (Spearman-Brown index = .97) and the medal stand tape (Spearman-Brown index = .96). Thus, the ratings of all participants viewing the same tape were averaged to create an index of the happiness of each of the athletes. Preliminary analyses revealed no effect of order of presentation, so the data were collapsed across the two versions of each tape.

The mean happiness ratings are presented in Figure 1. As predicted, bronze medalists appeared happier on average than their counterparts who won silver medals. When assessing the athletes' immediate reactions, participants assigned the bronze medalists a mean happiness rating of 7.1 (SD = 2.0) but the silver medalists a mean rating of only 4.8 (SD = 1.9). When examining the athletes on the medal stand, participants assigned the bronze medalists a mean rating of 5.7 (SD = 1.7) and silver medalists a mean rating of only 4.3 (SD = 1.8). These data were analyzed with a 2 (type of medal: bronze vs. silver) × 2 (tape: immediate vs. medal stand) analysis of variance (ANOVA). This analysis revealed two significant main effects, but no interaction. The main effect of tape, $F(1, 72) = 4.78$, $p < .05$, indicates that the athletes on the whole looked happier immediately after their performances than when they were on the medal stand. More important, the main effect of type of medal, $F(1, 72) = 18.98$, $p < .001$, indicates that the athletes who finished third looked significantly happier than those who finished second.

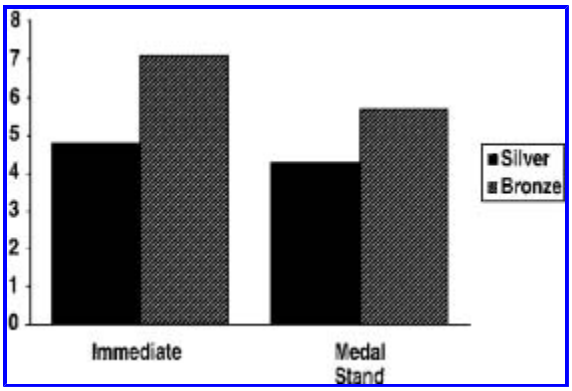

Figure 1. Mean happiness ratings.

There is a potential artifactual explanation of these results, however. In certain Olympic events, the competition is structured such that bronze medalists have just won a match or a game whereas silver medalists have just lost. A bronze medalist in wrestling, for example, would have just defeated the fourth place finisher, and the silver medalist would have just lost to the gold medal winner. We were concerned that being in the immediate aftermath of victory or defeat might have contaminated our comparison of bronze and silver medalists. Fortunately, most Olympic events (such as those in track, swimming, and gymnastics) are not structured in this way. In these events the athletes simply finish first, second, and third depending on how well they do.

To eliminate this "just won"–"just lost" artifact, we reanalyzed the data excluding all athletes involved in sports with this structure. This reduced our pool of 23 silver and 18 bronze medalists in the immediate-reactions videotape to 20 and 15, respectively. Similarly, it reduced our pool of 20 silver and 15 bronze medalists in the medal-stand tape to 14 and 13, respectively. A 2 × 2 ANOVA of these data yielded the same significant main effect of type of medal as before, $F(1, 58) = 6.70$, $p < .02$. Bronze medalists appeared happier both immediately after their events ($M = 6.7$) and on the medal stand ($M = 5.6$) than their counterparts who had won silver medals (Ms = 5.0 and 4.7). Consistent with our thesis, impartial judges viewed bronze medalists as being happier than silver medalists, and this effect was not limited to those few events in which bronze and silver medalists were in the immediate aftermath of a victory or a defeat, respectively.2

Is there any other alternative interpretation of these data? Might these results be due to differences in the *ex ante* expectations of bronze and silver medalists rather than—as we propose—their *ex post* thoughts about what might have been? We think not. First of all, there is no reason to believe that bronze medalists as a whole tended to exceed their expectations or that silver medalists on average tended to fall short of theirs. To be sure, our sample of silver medalists probably entered the Olympics with higher expectations on average than our sample of bronze medalists, but they also *performed* better as well. There is certainly no compelling reason to believe that one group over- or under-performed relative to their initial expectations.

This alternative interpretation can also be dismissed on empirical grounds. We obtained an unbiased measure of the athletes' likely expectations prior to the Olympics and then used a regression analysis to examine the effect of medal won (bronze or silver) after initial expectations were controlled statistically. The athletes' likely expectations were derived from *Sports Illustrated's* Olympic preview (Verschoth, 1992). *Sports Illustrated* predicted the likely bronze, silver, and gold medal winners of every Olympic event the week before the games began. Athletes who were expected to win gold, silver, or bronze medals were assigned

expectation scores of 1, 2, and 3, respectively. Those not predicted to win a medal were assigned an expectation score of 4. As anticipated, the athletes in our samples who won silver medals were originally expected to do better ($M = 2.8$) than those who won bronze medals ($M = 3.0$), although not significantly so, $t < 1.0$. More important, however, is that a comparison of actual and anticipated performance argues against the claim that our results are due to differences in initial expectations of bronze and silver medalists. Silver medalists as a whole did better than anticipated (actual = 2.0; anticipated = 2.8), and therefore should have been relatively happy. Bronze medalists, on the other hand, performed on average exactly as expected (actual and anticipated = 3.0).

More formally, we entered the expected finish of each athlete into a regression equation that predicted the agony–ecstasy ratings from the medal won (silver or bronze), the medal predicted (gold, silver, bronze, or none), and the type of videotape segment (immediate reactions or medal stand). This analysis revealed that the effect of medal won remained significant when expectations were statistically controlled, $t(72) = 4.3$, $p < .0001$.[3] Silver medalists looked less satisfied with their performances than did bronze medalists, and they did so for reasons unrelated to how well they were expected to perform.

Discussion

Our first study highlights a reliable context—Olympic competition involving bronze and silver medal winners—in which those who perform better nonetheless feel worse. On the surface this result is surprising because an underlying premise of all serious athletic competition is that athletes should strive as hard as they can, and that the higher they finish the better they feel. When examined with an eye toward the athletes' counterfactual thoughts, however, our findings seem less surprising. To the silver medalist, the most vivid counterfactual thoughts are often focused on nearly winning the gold. Second place is only one step away from the cherished gold medal and all of its attendant social and financial rewards. Thus, whatever joy the silver medalist may feel is often tempered by tortuous thoughts of what might have been had she only lengthened her stride, adjusted her breathing, pointed her toes, and so on. For the bronze medalist, in contrast, the most compelling counterfactual alternative is often coming in fourth place and being in the showers instead of on the medal stand.

But can we confidently attribute these results to the athletes' counterfactual thoughts? Although the data from Study 1 are consistent with this claim, it is important to examine directly the proposed asymmetry in the athletes' counterfactual comparisons. The following two studies were designed to do exactly that. Do silver medalists tend to think about how they almost won the gold? Do bronze medalists focus on how close they came to missing out on a medal altogether? What exactly do athletes think about after they learn their medal standing?

Study 2

To examine the nature of Olympic medalists' counterfactual thoughts, we turned once again to NBC's coverage of the 1992 Summer Olympic games. NBC's sportscasters interviewed numerous medal winners immediately following their events, and from this footage we developed a master tape of all of NBC's interviews of bronze and silver medalists. Participants were shown the tape and asked to assess the extent to which the athletes seemed preoccupied with thoughts of how they *did* perform versus how they *almost* performed.

Method

Participants.

Ten Cornell University students served as participants. As in the first study, we recruited students who considered themselves to be nonsports fans because we did not want any prior knowledge about the athletes to affect their ratings.

Stimulus materials.

NBC interviewed 13 silver medalists and 9 bronze medalists immediately after their events, and these 22 interviews comprised the stimulus tape for this study. Two versions of the tape were created, with the order of presentation of the athletes varied across the versions. The average length of each interview clip was 27 s (*SD* = 14 s). Blank spaces were inserted between the interviews to allow participants time to complete their ratings.

Procedure.

Participants arrived at the laboratory in groups and were told that they would be watching a videotape of athletes from the 1992 Olympic games. They were asked to watch and listen to each interview carefully and to rate each athlete's comments in two ways. First, they rated the apparent content of each athlete's thoughts on a 10-point scale ranging from "*at least I …*" (1) to "*I almost …*" (10). To clarify the meaning of this scale, participants were given an example of how a student who receives a B in a course could have various thoughts ranging from "at least I didn't get a C" to "I almost got an A."

Second, participants were asked to assess the extent to which the apparent content of the athlete's thoughts fell into three categories: (a) "Athlete seems focused on how he/she could have done worse; makes a comparison with one or more competitors who finished behind;" (b) "Athlete seems focused on how he/she could have done better; makes a comparison with one or more competitors who finished ahead;" (c) "Athlete seems focused on what he/she accomplished; no comparison to competitors." Participants were asked to indicate the percentage of the athlete's thoughts that seemed focused on each of the three categories. They could assign any number from 0 to 100% to each of the three categories, but the percentages they assigned had to add up to 100% for each athlete. The participants were asked to watch a number of clips without making any ratings so that they were aware of the types of comments they would be evaluating. Once participants were familiar with the format of the videotape and the rating scales, the rating session began.

Five participants rated each of the two versions of the videotape. As in the first study, a 1.5-inch (3.8 cm) strip of paper was affixed to the bottom of the video screen to occlude various graphics depicting the athlete's order of finish.

Results

The interrater reliability of participants' ratings was acceptably high (Spearman-Brown index = .74 and .93 for the first and second measures, respectively [4]), and so the ratings were averaged for each scale to create indices of the apparent thoughts of each athlete. Preliminary analyses of these data revealed no effect of order of presentation, so the data were collapsed across the two versions of the tape.

As predicted, silver medalists' thoughts were rated as being more focused on "I almost" than

were those of bronze medalists. On the 10-point "*At least I*" to "*I almost*" scale, participants assigned silver medalists' thoughts an average rating of 5.7 (*SD* = 1.5) and bronze medalists' thoughts an average rating of only 4.4 (*SD* = 0.7), $t(20) = 2.37$, $p < .03$.

The data from the second measure were less clear cut. First, participants thought that only a small percentage of the athletes' thoughts were focused downward on those they beat. The average assigned to this category was only 7.5% and did not differ between bronze and silver medalists. The percentages assigned to the other two categories conformed more closely to our predictions. Participants rated silver medalists as being more focused on upward comparisons (*M* = 38%) than bronze medalists (*M* = 20%), whereas bronze medalists were judged to be more focused on their own performance (*M* = 73%) than silver medalists (*M* = 54%). Because these data are not independent (the percentage assigned to all categories must equal 100%), our test of significance was based on an index that combined the last two categories. Specifically, the percentage assigned to the category "looking upward" was subtracted from the percentage assigned to the category "focusing on one's own performance." As predicted, this index was higher for bronze medalists (*M* = 53%) than for silver medalists (*M* = 16%), although the difference was only marginally significant, $t(20) = 1.57$, $p < .15$.

Discussion

The results of the second study provide support for the hypothesized difference in the counterfactual thoughts of the bronze and silver medalists. Silver medalists seem to be focused on the gold medal they "almost" won, while bronze medalists seem content with the thought that "at least I did this well." This asymmetry can thus explain the observed differences in the athletes' expressed emotions in Study 1. This can be seen most clearly through an analysis that combines the data from Studies 1 and 2. Fifteen of the 22 athletes whose counterfactual thoughts were assessed in Study 2 were on the immediate-reactions videotape in Study 1 and thus were also rated on the agony–ecstasy scale. As we predicted, the two ratings correlated significantly: The more focused the athletes were on almost finishing higher, the less happy they seemed ($r = -.56$, $p < .05$).[5] This relationship was also observed when the data for silver ($r = -.51$; $n = 10$) and bronze ($r = -.34$; $n = 5$) medalists were considered separately, although the sample sizes were then too small to yield statistical significance. Thus, by focusing on what they achieved, bronze medalists are rather happy; in contrast, a concern with what they failed to achieve makes the silver medalists seem less so.

In this study we did not have direct access to the athletes' thoughts; we had participants infer them on the basis of the athletes' comments. It is certainly possible, of course, that the athletes had various thoughts they did not verbalize. To overcome this limitation, we conducted a third study that examined bronze and silver medalists' own reports of their thoughts following an athletic competition.

Study 3

In designing Study 3, we sought an athletic forum with significant stakes where we could gain access to bronze and silver medalists immediately after their events. The 1994 Empire State Games provided such a forum. The Empire State Games have been a prominent amateur athletic event in New York State for the last 17 years. Athletes from across the state compete on a regional basis to qualify for the Empire State Games. Notable participants have included such athletes as Olympic gold medalists Dianne Roffe-Steinrotter and Jeff Blatnick and NBA basketball stars (and "Dream Team" members) Christian Laettner and Chris Mullin. In 1994,

more than 5,000 athletes from across New York State competed in the 4-day event.

Method

Participants.

One hundred fifteen Empire State Game medalists participated in this study. All of the participants won bronze (n = 55) or silver (n = 60) medals in swimming or track events. The athletes competed in either the Scholastic Division (composed exclusively of students up to 12th grade; n = 31 males and 34 females) or the Open Division (consisting mainly of college students; n = 25 males and 25 females).

Procedure.

The athletes were approached individually following their events and asked to rate their thoughts about their performance on the same 10-point scale used in Study 2. Specifically, they were asked to rate the extent to which they were concerned with thoughts of "*At least I …*" (1) versus "*I almost*" (10). Special effort was made to ensure that the athletes understood the scale before making their ratings. This was accomplished by mentioning how athletes might have different thoughts following an athletic competition, ranging from "I almost did better" to "at least I did this well."[6]

Results

As predicted, silver medalists' thoughts following the competition were more focused on "I almost" than were bronze medalists'. Silver medalists described their thoughts with a mean rating of 6.8 (SD = 2.2), whereas bronze medalists assigned their thoughts an average rating of 5.7 (SD = 2.7), $t(113) = 2.4$, $p < .02$.

Discussion

The data from this study are consistent with the findings from Study 2: Following a competition, silver medalists tend to focus more on what they failed to achieve than do bronze medalists. This asymmetry in counterfactual comparisons explains why bronze medalists tend to be happier than silver medalists. While bronze medalists can find contentment in thinking "at least I won a medal," silver medalists are often confronted with an imagined outcome that *almost* occurred—a preferred outcome in which they are the winner and have the gold medal hanging around their neck. Imagining what might have been can lead those who do better to feel worse than those they outperform.

General Discussion

The purpose of this research was to examine whether there are reliable situations in which those who are objectively better off nonetheless feel worse than those in an inferior position. Athletics offered an ideal context in which to test this question for the same reason that it offers a useful context for investigating many psychological hypotheses—the availability of data of unusual objectivity and precision (Baumeister & Steinhilber, 1984; M. G. Frank & Gilovich, 1988; Gilovich, Vallone, & Tversky, 1985; Lau & Russell, 1980). In addition, athletics was chosen as the domain of investigation in this case because performance in athletics often yields a clearly defined rank order: Someone enters the record books as the first-, second-, or third-place finisher.

It should be clear, however, that the significance of the present results extends far beyond the playing field or the medal stand. There are many other situations in which the same processes documented here can likewise cause those who are better off to feel worse. A student who misses out on an A- by one point and earns a B+ could easily feel less satisfied with the grade than someone who is in the middle of the pack of Bs. Or consider a person who correctly guesses all but one number in a lottery. Such an individual misses out on the jackpot, but usually wins a modest sum for coming close. The prize no doubt provides some enjoyment, but the knowledge of having just missed the jackpot is bound to come up from time to time and ruin otherwise blissful moments. More generally, as our opening quote from William James suggests, being one of the best may not be as satisfying as it might seem. The existence of a rival "best" can turn a gratifying appreciation of what one *is* into a disquieting focus on what one is *not*.

The hedonic impact of such a rival "best" raises the question of the extent to which social comparison processes rather than (or in addition to) counterfactual thoughts may have been responsible for our findings. We believe that our results are best situated in the research on counterfactual thinking for two reasons. First, we obtained evidence for the hypothesized asymmetry in the direction of counterfactual comparisons in Studies 2 and 3, but as yet no such evidence exists to support an asymmetry in the direction of social comparisons. Second, there is nothing in social comparison theory per se that would predict upward comparisons on the part of silver medalists and downward comparisons on the part of bronze medalists. Although such a pattern could certainly be made to fit with social comparison theory, it requires extratheoretical elements to do so. In contrast, the present pattern of results was originally derived from the work on counterfactual thinking and the psychology of "coming close" (Kahneman & Varey, 1990; Miller et al., 1990).

This does not mean, of course, that social comparison processes are never activated in the immediate aftermath of Olympic competition, or that such processes contributed nothing to the present findings. Social comparison processes and counterfactual thoughts are doubtless frequently intertwined. Social comparisons can be a source of counterfactual thoughts about "possible worlds" that one would not have otherwise, and counterfactual thoughts can make salient particular social comparisons that would otherwise remain hidden. Unfortunately, it is presently unclear how much of the asymmetry in counterfactual thinking we documented in this context was intertwined in this way with significant social comparisons.

Although the predicted findings were originally derived from previous research on counterfactual thinking, they also extend the work in this area in two important respects. First, as we stated at the outset, past research has held outcome constant and shown that the same outcome can give rise to very different reactions as a function of the counterfactual thoughts that are generated. Our results take this a step further: There are contexts in which people's counterfactual thoughts are sufficiently powerful to lead those who are objectively worse off to be reliably happier than those in a better position.

Our results also extend previous findings in this area by emphasizing the "automatic" or "imposed" nature of many counterfactual thoughts. Much of the recent work on counterfactual thinking has emphasized a person's ability to choose the most strategic counterfactual comparisons (Markman et al., 1993; Roese, 1994). "Counterfactual generation has functional value, and people tend to generate those counterfactuals that hold the greatest psychological value for them in a given situation" (Markman et al., 1993, p. 103). Downward comparisons (i.e., thinking about a worse outcome) are thought to provide comfort, whereas upward comparisons (i.e., thinking about a better outcome) are thought to improve future performance. Indeed, it has been shown that people who expect to perform again in the future are more likely to generate upward

counterfactuals than those who expect to move on (Markman et al., 1993).

Although many counterfactual thoughts are doubtless strategically chosen in this way, such motivational considerations cannot account for the present findings. On the whole, the silver and bronze medalists at the Barcelona Olympics were at the peak of their athletic careers and therefore likely to continue to engage in similar high-level competitions in the future. From a motivational perspective, then, both groups should have made upward counterfactual comparisons in order to prepare for future contests. The asymmetry in counterfactual comparisons that we observed implies that many counterfactuals are imposed by the nature of the events experienced.

Indeed, Kahneman (in press) outlined a continuum of counterfactual thinking that ranges from "automatic" to "elaborative." Elaborative counterfactual processing is partly brought on through the exercise of choice, and its direction and intensity is influenced by the individual's motives and intentions. Automatic counterfactual thinking, in contrast, is "initiated by the occurrence of an event and … [is] … explainable largely in cognitive terms" (Kahneman, in press). The counterfactual thoughts that distinguish silver and bronze medalists shade toward the latter end of this continuum. Coming close to winning the gold, for example, appears to automatically activate frustrating images of having almost won it all.

We are not suggesting, of course, that finishing second or coming close to a cherished outcome always leads to less satisfaction than a slightly more modest performance. Finishing second is truly a *mixed* blessing. Performing that well provides a number of direct benefits that increase our well being—recognition from others, boosts to self-esteem, and so on. At the same time, it can indirectly lower satisfaction by the unfortunate contrast with what might have been. Thus, the inconsistent effect of finishing second is analogous to the "endowment" and "contrast" polarity that Tversky and Griffin (1991) claimed affects the hedonic significance of *all* experienced events. According to their analysis, any experience has a direct effect on well-being by what it brings to one's endowment—that is, the pleasure or pain derived from the event itself. But a person's experiences also have an indirect effect on well being by altering the adaptation level against which future experiences are contrasted. Their contrast (in which the event itself establishes a new standard against which future events are compared) is different than the one at work here (in which the events' proximity to a better outcome causes one to lose sight of what is and focus on what might have been). The core idea is the same, however. In both cases, the direct effect of the event itself is offset by a comparison process with the opposite effect, be it a comparison of future outcomes to the present, or the present outcome to a counterfactual alternative that was almost attained.

Tversky and Griffin (1991) have delineated some of the general rules that govern the relative weighting of endowment and contrast, and thus whether the net effect of a given event enhances or diminishes well being. They acknowledged, however, that the degree to which a given event evokes endowment and contrast can be highly idiosyncratic. As a consequence, when applied to a problem such as ours it can be difficult to predict exactly when those who are better off will nonetheless feel worse than those who are less fortunate.

Another unresolved issue, this one more tractable, concerns the duration of the effects we have documented here. We have established that bronze medalists are happier than silver medalists in the short run, but does this effect hold up over time? As yet there are no data to answer this question. Nevertheless, one of the most noteworthy features of life's near misses seems to be their durability. Consider the account of finishing second that Nicholson Baker (1991) provides his wife:

[I] told her my terrible story of coming in second in the spelling bee in second grade by spelling *keep* 'c-e-e-p' after successfully tossing off *microphone*, and how for two or three years afterward I was pained every time a yellow garbage truck drove by on Highland Avenue and I saw the capitals printed on it, 'Help Keep Our City Clean,' with that impossible irrational K that had made me lose so humiliatingly …

Or consider the case of Abel Kiviat, the 1,500 m silver medalist in the 1912 Olympics in Stockholm. Kiviat had the race won until Britain's Arnold Jackson "came from nowhere" to beat him by one-tenth of a second. "I wake up sometimes and say, 'What the heck happened to me?' It's like a nightmare." Kiviat was 91 years old when he said this in an interview with the *Los Angeles Times* (cited in Tait & Silver, 1989, p. 351). It appears that thoughts about what might have been may plague us for a very long time.

References

Atkinson, J. W. (1964). *An introduction to motivation*. Princeton, NJ: Van Nostrand. [Context Link]

Baker, N. (1991). *Room temperature*. New York: Vintage. [Context Link]

Baumeister, R. F., & Steinhilber, A. (1984). Paradoxical effects of supportive audiences on performance under pressure: The home field disadvantage in sports championships. *Journal of Personality and Social Psychology*, *47*, 85–93. [Context Link]

Crosby, F. (1976). A model of egoistical relative deprivation. *Psychological Review*, *83*, 85–113. **Bibliographic Links** [Context Link]

Feather, N. T. (1967). Valence of outcome and expectation of success in relation to task difficulty and perceived locus of control. *Journal of Personality and Social Psychology*, *7*, 372–386. [Context Link]

Feather, N. T. (1969). Attribution of responsibility and valence of success and failure in relation to initial confidence and task performance. *Journal of Personality and Social Psychology*, *13*, 129–144. [Context Link]

Festinger, L. (1954). A theory of social comparison processes. *Human Relations*, *7*, 117–140. **Bibliographic Links** [Context Link]

Frank, M. G., & Gilovich, T. (1988). The dark side of self- and social perception: Black uniforms and aggression in professional sports. *Journal of Personality and Social Psychology*, *54*, 74–85. [Context Link]

Frank, R. H., & Cook, P. (1995). *The winner-take-all society*. New York: Free Press. [Context Link]

Gilovich, T., Vallone, R. P., & Tversky, A. (1985). The hot hand in basketball: On the misperception of random sequences. *Cognitive Psychology*, *17*, 295–314. **Bibliographic Links** [Context Link]

James, W. (1892). *Psychology*. New York: Holt. [Context Link]

Johnson, J. T. (1986). The knowledge of what might have been: Affective and attributional consequences of near outcomes. *Personality and Social Psychology Bulletin*, *12*, 51–62. [Context Link]

Kahneman, D. (in press). Varieties of counterfactual thinking. In N. Roese & J. Olson (Eds.), *What might have been: The social psychology of counterfactual thinking*. Hillsdale, NJ: Erlbaum. [Context Link]

Kahneman, D., & Miller, D. T. (1986). Norm theory: Comparing reality to its alternatives. *Psychological Review*, *93*, 136–153. **Bibliographic Links** [Context Link]

Kahneman, D., & Tversky, A. (1982a). The psychology of preferences. *Scientific American*, *2*, 160–173. [Context Link]

Kahneman, D., & Tversky, A. (1982b). The simulation heuristic. In D. Kahneman, P. Slovic, & A. Tversky (Eds.), *Judgment under uncertainty: Heuristics and biases* (pp. 201–208). New York: Cambridge University Press. [Context Link]

Kahneman, D., & Varey, C. A. (1990). Propensities and counterfactuals: The loser that almost won. *Journal of Personality and Social Psychology*, *59*, 1101–1110. [Context Link]

Lau, R. R., & Russell, D. (1980). Attributions in the sports pages: A field test of some current hypotheses about attribution research. *Journal of Personality and Social Psychology*, *39*, 29–38. [Context Link]

Markman, K. D., Gavanski, I., Sherman, S. J., & McMullen, M. N. (1993). The mental simulation of better and worse possible worlds. *Journal of Experimental Social Psychology*, *29*, 87–109. **Bibliographic Links** [Context Link]

Miller, D. T., & McFarland, C. (1986). Counterfactual thinking and victim compensation: A test of norm theory. *Personality and Social Psychology Bulletin*, *12*, 513–519. [Context Link]

Miller, D., Turnbull, W., & McFarland, C. (1990). Counterfactual thinking and social perception: Thinking about what might have been. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 22, pp. 305–331). San Diego, CA: Academic Press. [Context Link]

Olson, J. M., Herman, P., & Zanna, M. P. (1986). *Relative deprivation and social comparison: The Ontario symposium* (Vol. 4). Hillsdale, NJ: Erlbaum. [Context Link]

Roese, N. J. (1994). The functional basis of counterfactual thinking. *Journal of Personality and Social Psychology*, *66*, 805–818. [Context Link]

Roese, N. J., & Olson, J. M. (in press). *What might have been: The social psychology of counterfactual thinking*. Hillsdale, NJ: Erlbaum. [Context Link]

Suls, J. M., & Miller, R. L. (1977). *Social comparison processes: Theoretical and empirical perspectives*. New York: Wiley. [Context Link]

Tait, R., & Silver, R. C. (1989). Coming to terms with major negative life events. In J. S. Uleman & J. A. Bargh (Eds.), *Unintended thought* (pp. 351–382). New York: Guilford Press. [Context Link]

Taylor, S. E., & Lobel, M. (1989). Social comparison activity under threat: Downward evaluation and upward contacts. *Psychological Review*, *96*, 569–575. [Context Link]

Turnbull, W. (1981). Naive conceptions of free will and the deterministic paradox. *Canadian Journal of Behavioural Science*, *13*, 1–13. **Bibliographic Links** [Context Link]

Tversky, A., & Griffin, D. (1991). Endowment and contrast in judgments of well-being. In R. J. Zeckhauser (Ed.), *Strategy and choice* (pp. 297–318). Cambridge, MA: MIT Press. [Context Link]

Verschoth, A. (1992, July 22). Who will win what. *Sports Illustrated*. [Context Link]

Wells, G. L., & Gavanski, I. (1989). Mental simulation of causality. *Journal of Personality and Social Psychology*, *56*, 161–169. [Context Link]

[1]The reason that Americans were not as overrepresented in this tape as they were in the other is that for many of our medal stand segments, it is the gold medal winner who is being featured by NBC and the silver and bronze medalists who are pictured incidentally. Thus, there were many instances in which NBC was focused on an American gold medalist, and we were able to capitalize on their ancillary coverage of a silver or bronze medalist from another country. [Context Link]

[2]One other aspect of the data should be noted. Because seven of the athletes pictured in the

immediate-reactions videotape are also shown on the medal stand tape, the data are not all strictly independent and the ANOVA reported is not completely accurate. However, the results are not changed when this overlap is deleted from the analysis. We did this two ways: first, by keeping these athletes' immediate-reactions data and deleting their medal stand data; second, by deleting their immediate reactions and keeping their data from the medal stand. Regardless of which analysis we used to eliminate the redundancy, the bronze medalists were still rated significantly happier than the silver medalists. [Context Link]

[3]This effect remains significant when the athletes from the just won–just lost events are excluded and when the redundancy created by the 7 athletes who appear on both tapes is removed. [Context Link]

[4]The .93 is the average Spearman–Brown index for the last two components of the second dependent measure, which, as we discuss in the main text, are the focus of our analysis. [Context Link]

[5]We used the data from the immediate-reactions videotape in Study 1 rather than those from the medal stand tape simply because there was more overlap with the athletes interviewed in Study 2 for the former (15) than for the latter (7). Furthermore, 5 of the overlapping 7 from the medal stand tape also appeared on the immediate-reactions tape. [Context Link]

[6]We had hoped to include a question similar to the second measure used in Study 2 in which participants divided the athletes' thoughts into three categories by assigning the appropriate percentage to each. We thought this might be difficult for the athletes to do the moment they emerged from the heat of competition, however. We therefore tried to simplify matters by presenting the task spatially: The athletes were shown a plexiglass board in which we had carved a triple-pronged “pitchfork.” The athletes were to distribute 10 metal tokens contained in the handle of the pitchfork into the categories represented by each prong. The three prongs were labeled “Who I Beat,” “No Comparisons,” and “Who Beat Me,” and the athletes were told to apportion the tokens so as to represent the extent to which their thoughts were focused on each. Unfortunately, the measure proved to be exquisitely ineffective. Some athletes, particularly a number of shivering swimmers who had just emerged from the pool, seemed unable to comprehend it; others managed to dislodge the tokens; and the responses of still otherathletes were contaminated by the comments of onlookers who found the device fascinating and offered unsolicited advice. [Context Link]

Accession Number: 00005205-199510000-00002
