Egocentrism, Event Frequency, and Comparative Optimism: When What Happens Frequently Is "More Likely to Happen to Me"

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Three studies investigated the role of nonmotivated egocentric processes in comparative optimism (and pessimism). According to an egocentric-processes account, when people judge their comparative likelihood of experiencing an event (e.g., "Compared to the average person, how likely are you to become wealthy?"), they consider their own chances of experiencing the event more so than the referent's chances. This should produce higher comparative estimates when an event's absolute frequency is high rather than low—a prediction supported in Study 1, which manipulated event frequency through a novel, time frame manipulation. Study 2 empirically distinguished egocentrism from a related focalism account. In Study 3, comparative estimates were related to the perceived frequency of events, independent of the events' perceived desirability and controllability. Path analyses provided additional support for egocentrism, and systematic cases of comparative pessimism were observed as predicted by the egocentric-processes account.

Keywords: *egocentrism; unrealistic optimism; comparative optimism; comparative likelihood; judgment; event frequency*

People are often overoptimistic about the future. They tend to believe that they are more likely than others to experience good fortune and less likely to suffer harm. Although these beliefs suffer from a logical fallacy—not everyone can be uniquely invulnerable—this unrealistic optimism is well documented. Weinstein (1980) had student participants rate their likelihood of experiencing various positive and negative life events (e.g., developing a stomach ulcer, achieving professional recognition) relative to their peers. He found that the average likelihood responses given by participants tended to be "above average" for positive events but "below average" for negative events. Since Weinstein's (1980) study, the comparative optimism bias has been found with a variety of other subject populations (e.g., Middleton, Harris, & Surman, 1996), in both experimental and nonexperimental settings (e.g., McKenna & Albery, 2001), and covering a broad range of health and social domains (Helweg-Larsen & Shepperd, 2001).

Comparative optimism has typically been viewed as a product of motivated reasoning (Alicke, Klotz, Breitenbrecher, Yurak, & Vredenburg, 1995; Perloff & Fetzer, 1986; Regan, Snyder, & Kassin, 1995; Rothman, Klein, & Weinstein, 1996; Suls, Lemos, & Stewart, 2002). It should be comforting to believe that the personal likelihood of experiencing desirable events is higher and the personal likelihood of experiencing undesirable events is lower than one's peers. By holding these beliefs, the individual can maintain a positive view of the self. The pervasiveness of this phenomenon has led some researchers to assume that overoptimism is a basic regulatory function that protects people's self-concepts (Taylor & Brown, 1988).

Although motivated reasoning can play a major role in producing comparative optimism, nonmotivational factors also may play a critical, if not sufficient, role (Klar, Medding, & Sarel, 1996; Price, Pentecost, & Voth, 2002; Weinstein, 1980). One finding that supports this argument comes from Klar et al. (1996), who found that

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respondents tended to rate a randomly selected person as having a lower likelihood of experiencing a negative event compared to that person's peers. Klar et al. (1996) argue that optimistic estimates for the person occurred because raters considered the target's unique risk-reducing features but failed to consider that his or her peers may possess those same risk-reducing features.

The research described in this article investigated how a nonmotivated form of egocentrism might underlie various patterns of comparative optimism and pessimism. In this article, we do not intend to dismiss the role of motivation in producing comparative optimism effects, but rather, we hope to better explicate the way in which egocentrism and a specific event characteristic interact to produce comparative optimism (and comparative pessimism). The event characteristic that is of key importance in the present work is the overall frequency of the event.

Consider a case in which most individuals from a group assert that their chances of being falsely accused of a serious crime are less than that of other people in the group. A motivational account would assume that the undesirable nature of the event is a key reason why people report being less vulnerable than others to that event. However, the infrequent nature of this event might be important as well. From an objective standpoint, overall event frequency should be irrelevant; being falsely accused of a serious crime tends to be an improbable event for both the self and others. Therefore, an individual should use both absolute likelihood information for the self (e.g., "My chances of being falsely accused of a serious crime are low") and absolute likelihood information for others (e.g., "Other people's chances are low too") to formulate a comparative estimate (e.g., "My chances are the same as others of being falsely accused of a serious crime"). Nevertheless, empirical evidence suggests that people often fail to integrate information about others in their comparative judgments (Blanton, Axsom, McClive, & Price, 2001; Klar & Giladi, 1999; Kruger, 1999; Weinstein & Lachendro, 1982). In other words, when computing a comparative estimate for experiencing an event, their estimate may largely reflect their own absolute likelihood for the event (i.e., "I am unlikely to be falsely accused") without incorporating their estimates about others' absolute likelihood for the event. The consequence is a biased comparative judgment (i.e., "I am less likely than others to be falsely accused"). We will refer to this explanation of biases in comparative estimates as the "egocentric-processes account."

If people are affected by such egocentrism, then their comparative estimates for events should differ as a function of event base rate. Comparative estimates for their chances of experiencing a high base-rate event (e.g., having a cold this winter) should be high because people note their own high likelihood of experiencing the event without fully integrating others' high likelihood of experiencing the event. Similarly, comparative estimates for a low base-rate event should be low because people consider their own low likelihood of experiencing the event without fully integrating others' low likelihood of experiencing the event. Thus, comparative-judgment biases that might appear to arise from motivated reasoning, such as people believing they are less likely than others to be falsely accused of a serious crime, may actually result from nonmotivated sources of bias, such as egocentrism.

The idea that comparative optimism can result from egocentrism was described by Weinstein (1980). He posited that any factor that altered the individual's representation of the event should concomitantly influence the individual's comparative estimate through these same egocentric processes. Event frequency was one such factor that should influence the individual's representation of an event. He argued that when making judgments about risks, individual may focus on their own risk-decreasing behaviors while neglecting to consider that others also may engage in those same risk-decreasing behaviors (see also Weinstein & Lachendro, 1982). In fact, Weinstein (1980) was the first to predict and empirically demonstrate a relation between the perceived frequency of an event and comparative estimates.

In this article, we report three studies conducted to further investigate the influence of event frequency on comparative estimates. Three features of the present investigation distinguish it from previous studies of comparative optimism and event frequency. First, we directly manipulated the perceived frequency of events using a novel time frame manipulation in Experiments 1 and 2. This manipulation helps us to avoid unidentified potential confounds between the frequency and other characteristics of events that might have existed in previous studies. Second, we empirically distinguish between two different explanations for the relation between event frequency and comparative optimism—egocentrism and focalism, which is described later. Third, we tested for systematic cases of comparative pessimism. If people consider only their own personal likelihood, then people should exhibit reliable comparative pessimism with respect to highly frequent, undesirable events and highly infrequent, desirable events. Previous work has documented reliable relationships between event frequency and comparative optimism (e.g., Price et al., 2002; Weinstein, 1980, 1982, 1987), but none have documented reliable pessimism about those categories of events as predicted by the egocentric-processes account.

Such results would illustrate that the role of event frequency and egocentrism can, at least at times, outweigh motivational considerations. Thus, to test for comparative pessimism and the independent influences of event frequency and desirability, we solicited comparative estimates across a broad array of both undesirable and desirable events that also varied substantially (either naturally or by manipulation) in event frequency.

Finally, we also sought to assess the relation between perceived event frequency and an indirect index of comparative optimism—specifically, the differences between absolute estimates for the self and absolute estimates for others. The egocentric-processes account specifies that biases in comparative estimates arise through the differential impact of absolute estimates for the self and others, not as a result of biases in the formation of absolute estimates. Therefore, the egocentric-processes account predicts that there should be no relation between event frequency and differences in absolute estimates for self and others but a positive relation with comparative estimates. Such a finding would be counter to the results of a study by Price et al. (2002), who found that event frequency was negatively related to differences in these absolute estimates (although they employed only undesirable events in their study). Furthermore, by soliciting both absolute and comparative estimates for a broad array of events, we tested a central claim of the egocentric-processes account, which argues that absolute estimates for the self should be more strongly related to comparative estimates than should absolute estimates for others.

OVERVIEW

In Study 1, we utilized a novel manipulation to increase or decrease the perceived frequency of an event and investigated the effect of this manipulation on participants' comparative estimates. Participants in this study were asked to provide comparative estimates either for an event within a short time frame (e.g., within the next 2 weeks) or for the same event within a long time frame (e.g., within the next 3 months). In Study 2, we attempted to address one possible alternative explanation for the results of Study 1 and to strengthen our claim that egocentric processes best account for the influence of event frequency on comparative estimates. We did this by employing the same time frame manipulation that was used in Study 1 but asked participants to provide comparative estimates for the average student (instead of for the self as in Study 1). In Study 3, we sought to investigate the relation between perceived event frequency, controllability, and desirability with both absolute and comparative likelihood estimates across a broad array of events. By obtaining both types of likelihood estimates, we were able to test several predictions made by the egocentric-processes account.

STUDY 1

To examine the influence of event frequency on comparative estimates for desirable and undesirable events, we directly manipulated the perceived frequency of each of the tested events, thereby avoiding a situation in which frequent and infrequent events under investigation can differ in systematic ways unrelated to the frequency dimension. Specifically, participants provided comparative estimates for a given event either in a short time frame (e.g., occurring within the next 3 days) or a long time frame (e.g., occurring within the next 4 weeks). Our egocentric-processes account suggests that when participants make a comparative estimate for an event (e.g., "Compared to the average student, how likely is it that you will purchase your dream home in the next 32 years [6 years]?"), thoughts about their own absolute likelihood of experiencing the event would have a greater influence on their comparative estimates than would thoughts about the absolute likelihood for other people. Because the absolute frequency of an event is necessarily greater in a long time frame than in a short time frame, we predict that participants will make higher comparative estimates for an event in a long rather than short time frame condition, regardless of the desirability of the event.

Method

Participants. Participants ($N = 52$) were recruited from an introductory psychology course at the University of Iowa (UI). They received partial credit for a research exposure requirement.

Procedure. Participants were randomly assigned to complete one of two versions of a questionnaire that presented 16 critical events generated by the authors for this study (see Appendix A). In version 1, participants were presented with 8 events in a long time frame and 8 events in a short time frame. Half of the events in each of the time frame conditions were undesirable and half were desirable. In version 2, the time frame for each event was reversed. Thus, for each of the questionnaire versions, participants gave comparative estimates for 4 undesirable events in a short time frame, 4 undesirable events in a long time frame, 4 desirable events in a short time frame, and 4 desirable events in a long time frame. For each event, participants indicated their comparative estimates in an item phrased, for example, "Compared to the average UI student, how likely is it that you will purchase your dream home in the next 32 years [6 years]?" (–4 = *much less likely than the average UI student* to +4 = *much more likely than the average UI student*).

Results and Discussion

We calculated for each participant the averages for his or her comparative estimates for the undesirable events in a short time frame, for the undesirable events in a long time frame, for the desirable events in a short time frame, and for the desirable events in a long time frame. These averaged estimates were then submitted to a 2 (questionnaire version: 1 or 2) × 2 (time frame: short or long) × 2 (desirability: undesirable or desirable) mixed-model ANOVA, with questionnaire version as a between-subjects factor and both time frame and desirability as within-subjects factors. Figure 1 contains a graphical representation of the average values relevant to the analysis.

The key finding was a significant main effect of time frame, $F(1, 50) = 82.70$, $p < .001$. As predicted, participants gave higher comparative estimates for events in a long time frame ($M = 0.66$, $SD = 1.23$) than in a short time frame ($M = –0.64$, $SD = 1.14$). In addition, a significant main effect was found for desirability, $F(1, 50) = 63.48$, $p < .001$. Participants gave higher estimates for desirable events ($M = 0.69$, $SD = 1.26$) than for undesirable events ($M = –0.67$, $SD = 1.10$). Because these main effects were not qualified by a Time Frame × Desirability interaction, $F(1, 50) = 2.36$, $p > .10$, we may conclude that the influence of the time frame manipulation was not dependent on the desirability of the event. In fact, simple effect tests reveal that participants gave higher comparative estimates for the desirable events in a long time frame ($M = 1.44$, $SD = 1.23$) than in a short time frame ($M = –0.06$, $SD = 1.29$), $t(51) = 6.53$, $p < .001$. Participants also gave higher comparative estimates for the undesirable events in a long time frame ($M = –0.13$, $SD = 1.22$) than in a short time frame ($M = –1.21$, $SD = 0.98$), $t(51) = 6.35$, $p < .001$.

In addition to these key findings, the ANOVA also revealed a significant Time Frame × Questionnaire Version interaction, $F(1, 50) = 16.60$, $p < .001$, a nonsignificant Desirability × Questionnaire Version interaction, $F(1, 50) = 2.83$, $p > .10$, and a significant Time Frame × Desirability × Questionnaire Version interaction, $F(1, 50) = 8.04$, $p < .01$. However, the effects involving the questionnaire version factor are inconsequential because they are simply a product of our arbitrary choices as to which events to assign to the long or short time frame in the two versions of the questionnaire.

The desirability main effect is consistent with the idea that participants were motivated to maintain optimistic comparative beliefs; for the events tested in this study, participants tended to report higher comparative likelihoods of experiencing the positive rather than negative events. However, the time frame main effect, which was predicted by the egocentric processing account, cannot readily be explained by motivated reasoning. It is interesting to note with help from Figure 1 that for desirable events, participants were not comparatively optimistic

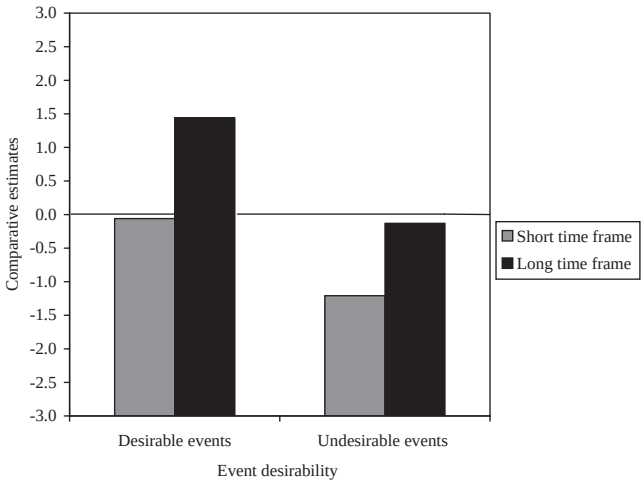

Figure 1 Average comparative estimates as a function of event time frame and desirability.

(i.e., responding above the 0 point of the response scale) when those events were described in the short time frame ($p > .10$), but they were comparatively optimistic when those events were described in a long time frame ($p < .001$). For undesirable events, participants were comparatively optimistic (i.e., responding below the 0 point of the response scale) when those events were described in the short time frame ($p < .001$), but they were not comparatively optimistic when those events were described in a long time frame ($p > .10$). Comparative pessimism was not detected within any of the four combinations of conditions (but see Studies 2 and 3). This pattern of findings suggests that motivational biases (sensitive to the desirability of the events) and egocentric biases (sensitive to the frequency of the events) may have had opposing influences in this study.

The finding that participants were not comparatively optimistic for undesirable events in a long time frame might raise a concern that the undesirable events used were less severe than those typically utilized in past studies of the optimism bias, which have consistently found that participants are comparatively optimistic for undesirable events (e.g., Weinstein, 1980, 1987). Actually, many of our events (see Appendix A) were less severe than those often used in past studies. However, it is important to note that supplementary analyses showed that the effect of the time frame manipulation was comparable for the most severe undesirable events and for the less severe undesirable events.[1] Thus, the influence of event frequency on comparative estimates does not appear to be restricted only to less severe or inconsequential events. A key reason why previous studies often find comparative optimism for a great majority of negative events is that the events included in those studies tend to be both undesirable and rare (causing both

motivation and egocentric processes to augment optimism), not necessarily because of the extreme undesirability of the events. Including more frequent undesirable events in such studies would reduce, but probably not eliminate, cases of comparative optimism.

Manipulation-Check Experiments

Thus far, we assumed that the time frame manipulation affected comparative judgments because it successfully influenced the perceived frequency of the events. We also assumed that other variables, such as the perceived desirability and controllability of the events, were not substantially confounded with the time frame manipulation. To test these assumptions, we conducted a separate manipulation-check experiment that used the same mixed design as Study 1 but involved different dependent variables. Participants (N = 20) estimated the number of individuals who would experience each of the 16 events in either a short or long time frame ("Out of 100 students, how many will [event]?"). For each event, they also indicated its perceived desirability and controllability ("How desirable would it be for you to [event]?" 0 = *very undesirable* to 10 = *very desirable*, and "How much personal control do you have over whether you [event]?" 0 = *very little control* to 10 = *complete control*). As expected, an analysis of the frequency estimates revealed that events were rated as more frequent when described in a long (M = 51.24, SD = 12.50) rather than short time frame (M = 24.47, SD = 7.72), $F(1, 18)$ = 108.01, $p < .001$.[2] This directional pattern held for all 16 events. Also as expected, desirability ratings did not significantly differ between the long (M = 4.48, SD = 0.53) and short time frames (M = 4.32, SD = 0.64), $F(1, 18)$ = 1.36, $p > .10$. The main effect of event desirability on desirability estimates was, of course, significant ($p < .001$), but the interaction with event time frame was not ($p > .10$). Finally, there was a nonsignificant but notable difference in control ratings between the long (M = 4.48, SD = 1.19) and short time frames (M = 3.79, SD = 1.17), $F(1, 18) = 3.46$, $p = .08$. The main effect of event desirability on controllability ratings was significant ($p < .01$), with desirable events rated as more controllable than undesirable events, but the interaction with event time frame was not significant ($p > .10$) and virtually zero in magnitude. Although the nonsignificant trend for a time frame main effect on controllability ratings raises the question of whether differences in perceived control underlie the time frame effect observed on comparative likelihood judgments, the effect of time frame on comparative likelihood judgments (d = 1.10) was nearly twice the size of the effect of time frame on control ratings (d = .58). Hence, it seems unlikely that perceived control was the critical mediator of the effect of time frame on comparative likelihood judgment (a conclusion also supported by the results of Study 3).

We also conducted another study in which participants (N = 16) provided comparative likelihood judgments (as in Study 1) and rated how confident they were with each of those judgments (e.g., "How confident are you about this judgment?" 1 = *not at all confident* to 9 = *very confident*). As in the main study, comparative judgments were higher when events were described in the long (M = 0.52, SD = 0.70) rather than short time frame (M = –0.57, SD = 0.68), $F(1, 14)$ = 21.17, $p < .001$, d = 1.58. Also as expected, participants were not more confident in their comparative estimates for events in long (M = 7.19, SD = 1.10) rather than short time frames (M = 7.24, SD = 1.24), $F < 1$. Thus, our time frame manipulation influenced participants' comparative estimates without significantly influencing their confidence in those estimates.

STUDY 2

Although we proposed that the time frame manipulation of Study 1 influenced participants' comparative estimates through egocentric processes, an alternative explanation exists. The results of Study 1 may alternatively be explained through focalism, a judgment process by which an individual's attention is shifted to assess support for one hypothesis to the exclusion of a complementary hypothesis (e.g., Fox & Levav, 2000). In the case of comparative estimates, focalism may lead the individual to assess evidence in support of the target designated by the comparative question (typically the self in comparative estimates) and neglect evidence in support of the referent designated by the comparative question (typically the "average student" or "average person"). A focalism account suggests that for the comparative estimate questions in Study 1, thoughts about participants' own absolute estimate were given greater weight than thoughts about the absolute estimate of others because the comparative estimate question asked about the self (as the target). Although the egocentric-processes account specifies that self-relevant information should have greater impact than other-relevant information in any comparative estimate (whether the self or the other is designated as the target of the judgment), the focalism account would suggest that other-relevant information should have greater impact in these judgments when the other is designated as the target of the judgment. However, because the self was always the target designated in the comparative estimate questions of Study 1, it remains unclear whether focalism, egocentrism, or both can account for the results of that study.

In Study 2, we addressed this issue by changing the comparative estimate question so that the average student became the target and the self became the referent; that is, participants were asked to rate the likelihood that

the average UI student would experience the event compared to themselves (e.g., "Compared to yourself, how likely is the average UI student to purchase his or her dream home in the next 32 years [6 years]?"). All other aspects of Study 2 remained the same as in Study 1. The focalism account predicts that participants should give higher comparative estimates for the average student in the long time frame condition than in the short time frame condition, yielding a pattern of means similar to those of Study 1. However, if egocentric processes are operating, then participants should give greater weight to self-relevant information regardless of whether the self is the target of the judgment; the result should be that participants should give lower comparative estimates for the average student in the long time frame condition than in the short time frame condition, yielding the opposite pattern of means. For example, because the participant's own absolute estimate is high for events in a long time frame and low for events in a short time frame, the egocentric-processes account predicts that for the event "Purchase his or her dream home," the participant would give lower comparative estimates for the average student in the long time frame ("in the next 32 years") than in the short time frame ("in the next 6 years").

Method

Participants. Participants ($N = 58$) were recruited from an introductory psychology course at the University of Iowa. They received partial credit for a research exposure requirement for this course.

Procedure. The materials for Study 2 were identical to those used in Study 1, with the exception of the change in the phrasing of the dependent measures. Specifically, participants were asked, for example, "Compared to yourself, how likely is the average UI student to purchase his or her dream home in the next 32 years [6 years]?" (–4 = *the average UI student is much less likely than myself to experience this event* to +4 = *the average UI student is much more likely than myself to experience this event*).

Results and Discussion

Did comparative estimates for the average student closely mirror those for the self under the time frame manipulations, as would be expected by a focalism account? Or was the pattern of comparative estimates reversed, as would be expected by the egocentric-processes account? As in Study 1, we calculated for each participant the average comparative estimate for the undesirable events in a short time frame, for the undesirable events in a long time frame, and so forth. These averaged estimates were then submitted to a 2 (questionnaire version: 1 or 2) × 2 (time frame: short or long) × 2 (desirability: undesirable or desirable) mixed-model ANOVA. Figure 2 shows a graphical representation of the averaged values relevant to the analysis.

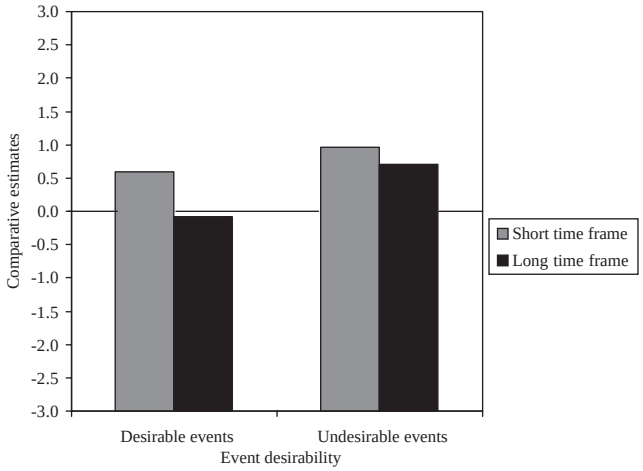

Figure 2 Average comparative estimates as a function of event time frame and desirability.

The key finding was the significant main effect for time frame, $F(1, 55) = 12.91$, $p < .01$. As we had predicted and in contrast to the results of Study 1, participants gave higher comparative estimates for the average student for events in a short time frame ($M = 0.78$, $SD = 0.97$) than in a long time frame ($M = 0.32$, $SD = 0.92$). In addition, a significant main effect was found for desirability, $F(1, 55) = 24.08$, $p < .001$. Participants gave higher comparative estimates for the average student for undesirable events ($M = 0.84$, $SD = 0.86$) than for desirable events ($M = 0.26$, $SD = 0.99$). Because these main effects were not qualified by a Time Frame × Desirability interaction, $F(1, 55) = 2.20$, $p > .10$, we may conclude that the influence of the time frame manipulation on participants' comparative estimates for the average student was not dependent on the desirability of the event. In fact, simple effect tests reveal that participants gave higher comparative estimates for the average student for the undesirable events in a short time frame ($M = 0.97$, $SD = 0.92$) than in a long time frame ($M = 0.70$, $SD = 0.85$), although this effect was only marginally significant, $t(57) = 1.67$, $p < .10$. Participants also gave higher comparative estimates for the average student for the desirable events in a short time frame ($M = 0.59$, $SD = 1.01$) than in a long time frame ($M = –0.08$, $SD = 0.98$), $t(56) = 3.37$, $p < .01$. In fact, because participants' comparative estimates for the average student for the desirable events in a short time frame were significantly higher, $t(56) = 4.42$, $p < .001$, than the 0 point of the response scale (indicating that participants believed that the average student was more likely than themselves to experience those desirable events), we can conclude that participants were comparatively pessimistic for those events.

These simple-effect analyses indicate that participants gave lower comparative estimates for the average student in the long rather than short time frame, regardless of the desirability of the event. However, the influence of the event time frame manipulation on participants' comparative estimates for the average student in Study 2 ($d = 0.49$) was not nearly as strong as the influence of this manipulation on comparative estimates for the self in Study 1 ($d = 1.10$), as can be seen by contrasting Figures 1 and 2. Although the pattern of means clearly supports the egocentric-processes account, the reduced effect of the time frame manipulation suggests that focalism also possibly played a role. If focalism had no effect, then the pattern of means should have been opposite to those of Study 1 (which it was), but the effect size of the event time frame manipulation should have been equivalent to that of Study 1 (which it was not). By having to judge the average student's (rather than the self's) comparative likelihood, more weight may have been given to the absolute estimate for the average student in the judgment process. Thus, having the average student, and not the self, serve as the target of the comparative estimate may have allowed the egocentric processes to be partially mitigated by focalism in this study. These results are consistent with other research showing that the magnitude of comparative optimism is reduced when participants are asked to provide comparative estimates for the average student rather than for the self (Eiser, Pahl, & Prins, 2001; Hoorens, 1995; Weinstein & Lachendro, 1982).

In addition to the key findings described above, the mixed-model ANOVA also revealed a nonsignificant main effect for questionnaire version, $F(1, 55) = 2.72$, $p > .10$, a nonsignificant Desirability × Questionnaire Version interaction, $F(1, 55) = 1.31$, $p > .10$, a significant Time Frame × Questionnaire Version interaction, $F(1, 55) = 4.71$, $p < .05$, and a nonsignificant Time Frame × Desirability × Questionnaire Version interaction, $F < 1$. However, as was the case with Study 1, the effects involving the questionnaire version factor are inconsequential because they are simply a product of our arbitrary choices as to which events to assign to the long or short time frame in questionnaire version 1 or 2.

STUDY 3

The results of Studies 1 and 2 show that manipulations of event frequency do influence people's comparative likelihood estimates and that this relation cannot solely be accounted for by a focalism explanation. In Study 3, we extended our investigation using a different methodology in which participants provided both comparative likelihood estimates and absolute likelihood estimates (for self and others) for a large number of events that varied on each of the dimensions of perceived frequency, desirability, and controllability (obtained from pretest ratings).

In addition to allowing us to investigate the relation of event frequency and likelihood estimates across a large set of events, this methodology allowed us to collect more direct evidence for the role of egocentric processes. Participants made not only comparative estimates but also absolute estimates for both the self (e.g., "How likely are you to win free tickets to a hockey game?") and others (e.g., "How likely is the average student to win free tickets to a hockey game?"). If comparative judgments are based primarily on self-relevant likelihood information, as the egocentric-processes account predicts, then absolute estimates for the self should be more strongly related to comparative estimates than should absolute estimates for others. By demonstrating that absolute estimates for the self are more strongly related to comparative estimates than are absolute estimates for others, we would offer the most convincing evidence of the present studies that egocentric processes are operative in producing comparative estimates. Another closely related issue is whether event frequency has any differential effects on individual's absolute estimates for the self and others. Although Price et al. (2002) found a negative relation between event frequency and difference scores between absolute estimates for self and others, the egocentric-processes account suggests that there should be no relation.

Also, by utilizing events that varied on perceived frequency, desirability, and controllability, we are able to examine the impact of the interaction among these dimensions. One possible interaction is between the perceived desirability and controllability of the event. Event controllability may bias likelihood estimates in one of two ways. First, event controllability may bias absolute estimates for the self and for others. The individual may believe that he or she possesses greater control than others over "controllable" events (but not uncontrollable events). Thus, the individual may give higher absolute estimates for the self than for others for controllable, desirable events but lower absolute estimates for the self than for others for controllable, undesirable events. These biased absolute estimates for controllable events should then result in biased comparative estimates.

A second way in which event controllability may bias comparative estimates is through the egocentric-processes account we have described earlier. This account suggests that comparative estimates can be biased even when absolute estimates are not. When answering absolute estimate questions, individuals may recognize that others possess similar levels of control as the self over both controllable and uncontrollable events, resulting in no differential biases in absolute estimates for self and others. However, when answering

comparative estimate questions, individuals may think about how much control they have over the event but neglect to think about how much control others have. Therefore, for controllable events, participants might express greater comparative optimism (i.e., low estimates for undesirable events but high estimates for desirable events), whereas for uncontrollable events, this pattern would be less strong or perhaps even reverse (i.e., high estimates for undesirable events but low estimates for desirable events). Including events that varied on perceived desirability and controllability permitted us to test for each of these possibilities.

Finally, Study 3 examined one of the more intriguing possible consequences of egocentric processes in comparative estimates. Because of the greater influence of absolute estimates for the self (than for others) in comparative estimates, there may be categories of events for which comparative pessimism tends to arise in individuals' likelihood estimates. We have argued that individuals will tend, on average, to give high comparative estimates for events that are highly frequent and low comparative estimates for events that are highly infrequent. Thus, we should find comparative pessimism for frequent, undesirable events and infrequent, desirable events. Such a finding would illustrate that the role of event frequency and egocentrism can, at least at times, outweigh motivational considerations.

Method

Pretest. Pretest participants ($N = 57$) were randomly assigned to rate a subset (approximately one third) of a total of 128 events. Each participant was given a questionnaire with the instructions to rate each of the events for their degree of perceived frequency (1 = *highly infrequent* to 9 = *highly frequent*), perceived desirability (1 = *very undesirable* to 9 = *very desirable*), and perceived controllability (1 = *completely uncontrollable* to 9 = *completely controllable*). The average of the perceived frequency, desirability, and controllability ratings for each of the 128 events was then computed across participants. A total of 64 events were chosen so that the set would represent low and high values on each of the three variables and would roughly represent the eight possible combinations of those variables (see Appendix B). For example, 8 events were high in frequency, high in desirability, and high in controllability.

Participants for main study. Participants ($N = 63$) were recruited from an introductory psychology course at the University of Iowa and received partial credit for a research exposure requirement.

Procedure. All portions of this study were completed on computers. First, participants were asked to rate their comparative likelihood of experiencing each of the 64 pretested events (in one of three random orders). One likelihood question asked, for example, "Compared to the average UI student of the same age and sex, how likely is it that you will win free tickets to a hockey game?" Participants made their comparative estimates by clicking the mouse on an 11-point scale (–5 = *much less likely than the average UI student* to +5 = *much more likely than the average UI student*).

After completing the set of comparative estimates, participants made both absolute estimates for the self and for the average UI student for the same 64 events. The absolute estimates for the self were phrased, for example, "How likely is it that you will win free tickets to a hockey game?" (1 = *not at all likely to happen to me* to 11 = *very likely to happen to me*). The absolute estimates for the average student were phrased, for example, "How likely is it that the average UI student will win free tickets to a hockey game?" (1 = *not at all likely to happen to the average UI student* to 11 = *very likely to happen to the average UI student*). Half of the participants made all 64 of the absolute estimates for the self before making the estimates for the average student, whereas the remaining participants did the reverse.

Results and Discussion

Comparative estimates. The analyses addressed two important questions: Were participants' comparative estimates positively related to the perceived frequency of the event? And did this relation exist holding constant the perceived controllability and desirability of the event? Regression analyses were conducted in which average comparative estimates (made by participants in the main study) were used as the criterion and average ratings of the perceived frequency, desirability, and controllability (made by participants in the pretest) were used as the predictors. Thus, the event (and not the person) was the unit of analysis. The relation between both perceived frequency and controllability with comparative estimates is shown separately for undesirable (Figure 3b) and desirable events (Figure 3a). Inspection of both figures indicates that participants gave higher comparative estimates as the perceived frequency of the event increased, consistent with our predictions. This relation is confirmed by a significant main effect of frequency, $\beta = .282$, $SE = .106$, $t(56) = 2.66$, $p < .05$. Comparisons between Figure 3a (desirable events) and Figure 3b (undesirable events) show that the relation between perceived frequency and comparative estimates does not appear to depend on the desirability of the event. Furthermore, the role of perceived frequency on comparative estimates does not appear to depend on the controllability of the event. In fact, neither the Frequency × Controllability interaction, $\beta = .087$, $SE = .016$, $t < 1$, nor the Frequency × Desirability interaction, $\beta = -.020$, $SE = .013$, $t(56) = -1.63$, $p > .10$, attained significance. These

main effects were not qualified by a Frequency × Desirability × Controllability interaction, R^2 Δ of $F(1, 56) < 1$. Thus, as the perceived frequency of the event increased, participants' comparative estimates also tended to increase, and this occurred independently of the desirability or controllability of the event (also see Weinstein, 1987).

An interaction between event desirability and controllability also had been predicted. Specifically, a strong positive relation should have been found between event desirability and comparative estimates for controllable events. However, no such relation should have been found for uncontrollable events. Figure 4 shows the regression slopes relating event controllability and desirability to comparative estimates. The main effect for desirability was significant, β = –.145, *SE* = .058, $t(56) = -2.50$, $p < .05$, as was the main effect of controllability, β = –.344, *SE* = .093, $t(56) = -3.72$, $p < .01$. More important, both of these main effects were qualified by a significant Desirability × Controllability interaction, β = .054, *SE* = .014, $t(56) = 4.02$, $p < .001$. As shown in Figure 4, event desirability and comparative estimates were positively related for controllable events. However, event desirability and comparative estimates were weakly related (or even negatively related) for uncontrollable events. Thus, participants showed comparative optimism in their likelihood estimates for controllable events but not for uncontrollable events. Analyses presented in our Absolute Estimates section (see below) tested whether this effect involving controllability is partially attributable to biases in absolute estimates for self and others.

We also predicted that comparative pessimism might be found for some categories of events, specifically, highly frequent, undesirable events and highly infrequent, desirable events. For each of the 64 events, we conducted tests comparing the average comparative estimates with the 0 point of the response scale. Of the 64 events, participants exhibited comparative optimism for 18 events, pessimism for 13 events, and were not significantly biased for the remaining 33 events. Of the 13 events for which participants were comparatively pessimistic, 11 were from the two categories we had predicted. Specifically, 6 were high-frequency, undesirable events and 5 were low-frequency, desirable events. It is also worth noting that of the 18 events for which participants were comparatively optimistic, 16 were from the two categories we had predicted. Specifically, 9 were high-frequency, desirable events and 7 were low-frequency, undesirable events. Thus, the frequency of the event appears to be an important factor in determining biases in comparative estimates, producing comparative optimism for some types of events and comparative pessimism for other types. The cases of comparative pessimism illustrate that the role of event frequency and egocentrism can, at least at times, outweigh motivational considerations when people make comparative likelihood judgments.

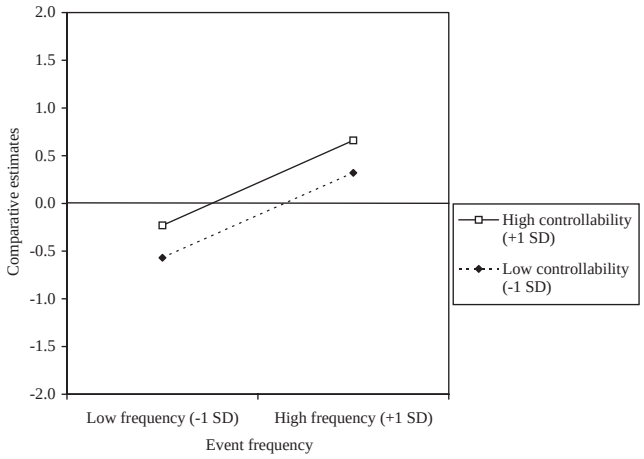

Figure 3a. Comparative estimates as a function of event frequency and controllability for desirable events.
NOTE: Regression coefficients derived from selected high or low values (–1 or +1 *SD*) of the average pretest ratings of event frequency and controllability.

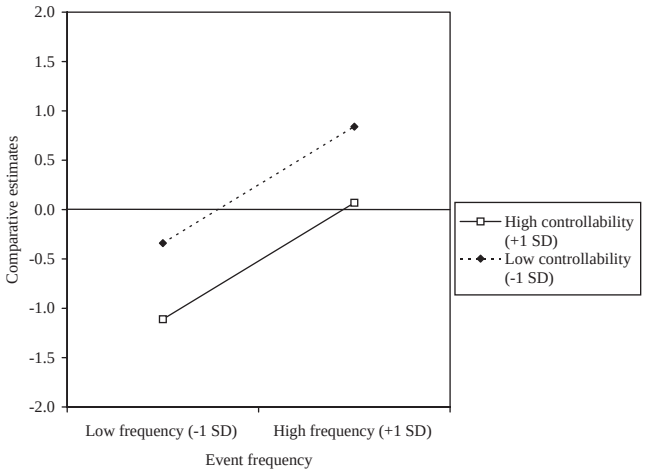

Figure 3b. Comparative estimates as a function of event frequency and controllability for undesirable events.
NOTE: Regression coefficients derived from selected high or low values (–1 or +1 *SD*) of the average pretest ratings of event frequency and controllability.

Absolute estimates. Does the relation between event frequency and likelihood judgments only exist when the likelihood judgments are direct, comparative judgments (How likely are you compared to others?), as suggested by the egocentric-processes account? Or does the relation between event frequency and likelihood judgments also exist when the likelihood judgments are made through separate absolute estimates for self and for others? To address this issue, we computed an indirect index

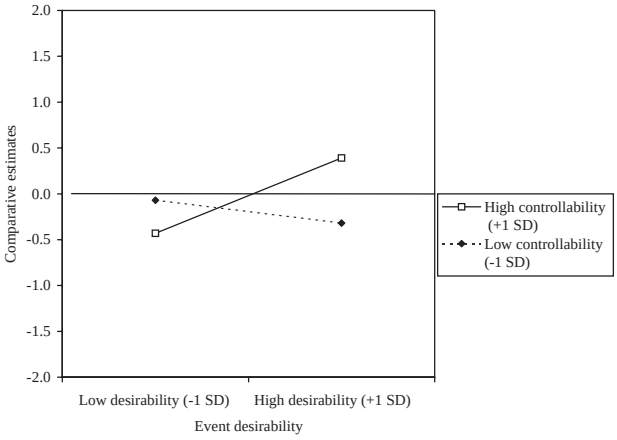

Figure 4 Average comparative estimates as a function of event controllability and desirability.
NOTE: Regression coefficients derived from selected high or low values (–1 or +1 *SD*) of the average pretest ratings of event desirability and controllability.

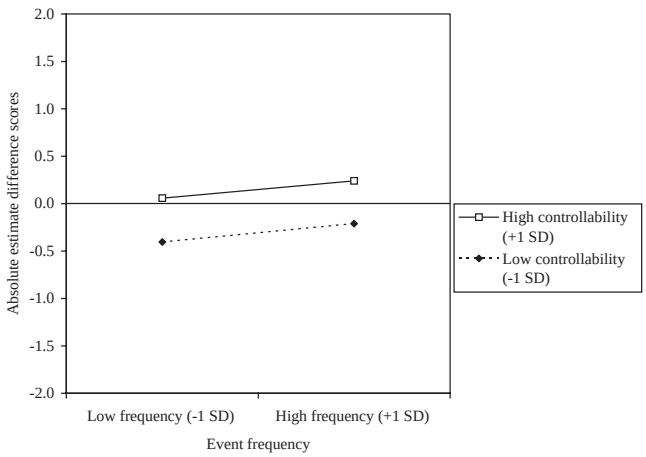

Figure 5a. Absolute estimate difference scores as a function of event frequency and controllability for desirable events.
NOTE: Regression coefficients derived from selected high or low values (–1 or +1 *SD*) of the average pretest ratings of event frequency and controllability.

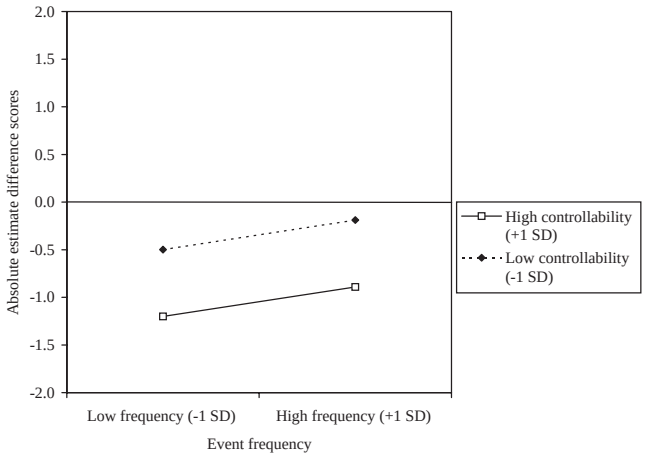

Figure 5b. Absolute estimate difference scores as a function of event frequency and controllability for undesirable events.
NOTE: Regression coefficients derived from selected high or low values (–1 or +1 *SD*) of the average pretest ratings of event frequency and controllability.

of comparative optimism—specifically, a difference score for each event between the average absolute estimates for the self and for the average student. We then performed regression analyses on these difference scores, with higher scores indicating that the self was given a higher absolute estimate than was the average student. The relations between both perceived event frequency and controllability with absolute estimate difference scores are shown separately for desirable (Figure 5a) and undesirable (Figure 5b) events. Inspection of Figures 5a and 5b suggests that event frequency is not related to absolute estimate difference scores for either desirable or undesirable events. Indeed, neither the main effect of frequency nor the interaction of frequency with any of the other variables were significant, $.006 < \beta s < .077$, $ts < 1$.

The failure to find a positive relation between event frequency and absolute estimate difference scores suggests that participants did not assume that event frequency differentially influences their own and others' absolute likelihood of experiencing an event. Rather, participants seemed to give higher absolute estimates both for self and for others when the event was perceived to be high in frequency.[3] Nevertheless, event frequency did influence the direct comparative estimates. This set of findings is consistent with our argument that egocentric processes influence direct comparative estimates by leading the individual to rely more heavily on absolute estimates for self (than for others) when forming a comparative judgment.

Did the interaction between desirability and controllability found in comparative estimates also emerge in absolute estimate difference scores? A significant main effect was found for desirability, $\beta = -.187$, $SE = .065$, $t(56) = -2.87$, $p < .01$, and for controllability, $\beta = -.357$, $SE = .104$, $t(56) = -3.42$, $p < .01$. And, similar to findings for the comparative estimates, these main effects were qualified by a significant Desirability × Controllability interaction, $\beta = .054$, $SE = .015$, $t(56) = 3.61$, $p < .01$. The interaction is displayed in Figure 6. It can be seen in this figure that for controllable events, there was a strong positive relation between perceived event desirability and absolute estimate difference scores. However, for uncontrollable events, event desirability was only weakly related to absolute estimate difference scores. This finding is consistent with the position that individuals may believe they

uniquely possess control for controllable events and thus are extremely optimistic about such events. It appears that event controllability might not bias comparative likelihood estimates through the egocentric-processes account we have invoked; the egocentric-processes account asserts that biases in likelihood estimates emerge from differential use of self-relevant likelihood information in comparative estimates, not from biases in absolute estimates themselves.

Relating absolute and comparative estimates. The egocentric-processes account that we have described suggests that absolute estimates for the self should be more strongly related to comparative estimates than should absolute estimates for others. As a further test of the proposed egocentric processes in comparative estimates, we performed a path analysis for each participant relating his or her absolute estimates for both the self and the average student to his or her comparative estimates across all 64 events. We then averaged the path values across all 63 participants. These average path values are shown in Figure 7. It can be seen in Figure 7 that absolute estimates for the self were in fact more strongly related to participants' comparative estimates than were absolute estimates for the average student. This suggests that self-relevant likelihood information had a differentially greater impact on comparative estimates than did other-relevant likelihood information, consistent with our egocentric-processes account.

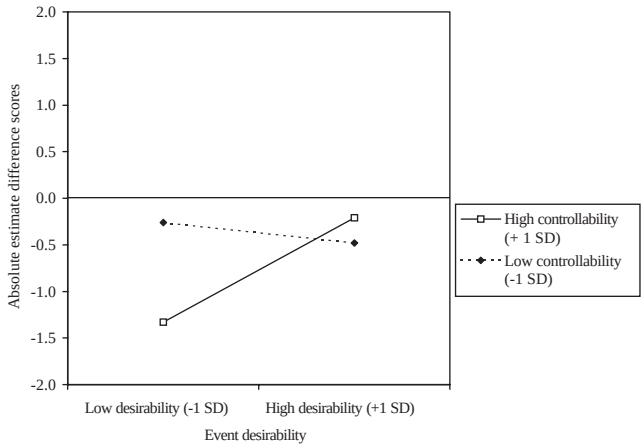

Figure 6 Absolute estimate difference scores as a function of event controllability and desirability.
NOTE: Regression coefficients derived from selected high or low values (−1 or +1 SD) of the average pretest ratings of event desirability and controllability.

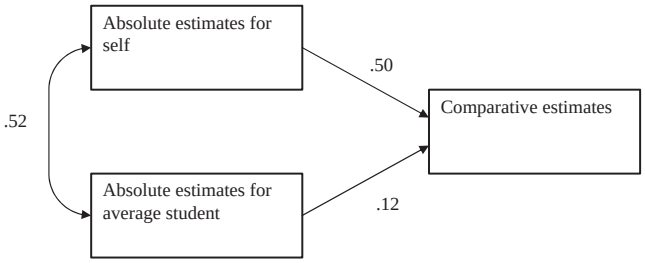

Figure 7 Average path values relating each participant's absolute estimates for self and the average student to his or her comparative estimates across all 64 events.
NOTE: The average path coefficients appear in the straight arrows and average correlations appear in the curved arrows.

GENERAL DISCUSSION

Objectively, event frequency should have no overall impact on people's comparative likelihood estimates; in general, events that occur frequently should do so both with respect to the self and for other people. However, we found consistent support for the relation between perceived event frequency and comparative likelihood estimates across three studies. This was true when we used a direct manipulation of event frequency (Study 1 and 2), which reduces the possibility that a third factor accounted for the relation. Comparative estimates also were shown to be related to the perceived frequency of events among a large and broad array of events that differed in perceived frequency, desirability, and controllability (Study 3). The relation persisted even after controlling for event desirability and controllability.

We argued that the relation between perceived event frequency and comparative estimates results from egocentric processes, in which self-relevant likelihood information more strongly affects comparative estimates than does other-relevant likelihood information. Strong support for this position was found in Study 2, where the time frame manipulation produced the opposite pattern of results when the average student (rather than the self) was the target. As anticipated by the egocentric-processes account, participants in Study 2 gave the average student lower comparative estimates for an event when the participants' own absolute likelihood was high (in long time frame) rather than low (in a short time frame). Furthermore, no relation was found in Study 3 between event frequency and absolute estimate difference scores. This finding is consistent with the egocentric-processes account, which assumes that biases in comparative estimates arise not from differences in absolute estimates for self and others but from differential use of absolute estimates for the self versus others when making comparative judgments. Also consistent with this reasoning, path analyses revealed that comparative estimates in Study 3 were more strongly related to absolute estimates for the self than for others. And finally, numerous instances of comparative pessimism for events were found in Study 3, a finding that is compatible with the egocentric-processes account and demonstrates that

egocentric processes can at times outweigh the influence of motivated processes in producing biases in comparative estimates.

These findings can be compared with those of both Weinstein (1980) and Price et al. (2002). Unlike the results of Weinstein (1980), which showed comparative optimism for nearly all of the tested events, we showed many instances in which comparative pessimism occurred, as predicted by an egocentric-processes account (for frequent, undesirable events and for infrequent, desirable events). Also, we found a significant Desirability × Controllability interaction (Study 3), which was not reported by Weinstein (1980). And unlike Price et al. (2002), we found no evidence for a negative relation between event frequency and absolute estimate difference scores. Whereas Price et al. (2002) found this relation among the events used in their study (which were all undesirable events), we did not find this relation for either the undesirable or desirable events in Study 3. The difference in findings between the present studies and those of Price et al. (2002) may be a consequence of the manner in which event frequency and likelihood estimates were solicited. In Study 3, event frequency ratings and absolute estimate difference scores were obtained from separate samples of participants. In the Price et al. (2002) studies, both the event frequency ratings and the absolute estimate difference scores were obtained from the same sample of participants. The (negative) relation between event frequency and absolute estimate difference scores found in the Price et al. (2002) studies may have been due to the inclusion of a few events that participants in their study had never personally experienced yet recognized were commonly experienced by others (e.g., divorce). This also would account for the stronger relation they report between event frequency and absolute estimates for others than for self (which we did not find in the present studies).

Our results extend the proposed influence of egocentrism in other judgment domains. For example, characteristics of tasks, such as their level of difficulty, have been shown to influence comparative ability judgments (Kruger, 1999). Individuals provide "better-than-average" comparative ability judgments for relatively easy tasks (e.g., using a computer mouse) but "worse-than-average" comparative judgments for relatively difficult tasks (e.g., writing computer code). Also, Blanton et al. (2001) have shown that characteristics of events may elicit comparatively optimistic or pessimistic estimates of one's ability to cope with an event. For relatively severe, consequential events, individuals tend to rate their own ability to cope with these events less favorably than others' ability to cope with these events, whereas for relatively minor, inconsequential events, individuals tend to rate their own ability to cope with these events more favorably than others' ability to cope with these events. Although participants in the Blanton et al. (2001) study were pessimistic in their estimates of their ability to cope with severe, consequential events (if the event had happened), participants in our study were optimistic about their ability to avert undesirable events and promote desirable events when those events were controllable (but not uncontrollable). As in the present studies, these studies show that characteristics of events may produce biases in comparative estimates, sometimes in the direction of comparative pessimism.

The findings presented here confirm that when people estimate their likelihood of experiencing an event compared to the average person, they have a tendency to overweight self-assessments (regarding absolute likelihood) relative to average-person assessments. Although we have referred to this tendency as egocentrism, it is important to note that this key finding may reflect a broader tendency for people to overweight assessments about any singular or highly individualized person relative to assessments about a group or otherwise generalized entity. It is possible, for example, that assessing the average absolute likelihood for a group or generalized entity—such as the "average student"—is more difficult than doing the same for a singular and individualized target, thereby influencing the relative impact of the two assessments when people make comparative judgments (for discussions of related arguments, see Alicke et al., 1995; Klar et al., 1996; Klar & Giladi, 1999). Hence, in the present studies, because the self was singular and highly individualized, whereas the "average student" was not, the self-assessments may have been easier to make and had more impact on comparative judgments. Further research is needed to resolve this issue.

The manner in which egocentrism was proposed to bias comparative likelihood estimates is concordant with research showing that egocentric processes also govern other types of social judgments (see Dunning, 2000; Krueger, 2000). For example, others have shown the prominence of self's position in social judgments such as the false consensus effect (Krueger & Clement, 1994). Dunning (2000; Dunning & Cohen, 1992) demonstrated that the way we think about ourselves (personal standing and our idiosyncratic ways of defining traits) strongly influences our judgments of other people. Together with the present studies, these lines of research argue for the dominance of information about the self in social judgments.

In summary, people sometimes hold more favorable views about their comparative likelihood of experiencing (or avoiding) events in the future than reality warrants. At first glance, it may appear that these beliefs are readily explained by self-serving motives. Although motivation can certainly play a role in many instances of com-

parative optimism, our research explicates a key way in which a nonmotivational process can contribute to comparative optimism. Indeed, our findings indicate that nonmotivated egocentric processes can, for certain predictable categories of events, lead to comparative pessimism—a finding that attests to the influential role that nonmotivated biases can play in comparative judgments that seem overly flattering (or overly unflattering) to the self.

APPENDIX A
Events for Studies 1 and 2

	Time Frame Condition	
Event Type	*Short*	*Long*
Desirable Events		
Find $20 bill on ground	2 weeks (Q2)	20 years (Q1)
Someone will genuinely compliment you	3 weeks (Q1)	10 years (Q2)
Be treated to an elegant dinner by a friend	3 days (Q1)	10 years (Q2)
Be wealthy	6 years (Q2)	35 years (Q1)
Witness someone help a motorist stranded on the highway	6 days (Q2)	9 years (Q1)
Purchase your dream home	6 years (Q1)	32 years (Q2)
Hear a dirty joke that makes you laugh	6 hours (Q1)	2 years (Q2)
Go on a vacation to an exotic destination	2 months (Q2)	20 years (Q1)
Undesirable events		
Contract fatal disease	5 years (Q2)	50 years (Q1)
Waitress spills the food order on your table	2 weeks (Q1)	5 years (Q2)
Receive a call from a telemarketer	2 days (Q2)	10 years (Q1)
Marriage will end in a bitter divorce	10 years (Q2)	50 years (Q1)
Be fired/laid off from a job	5 years (Q2)	40 years (Q1)
Find a wart on your toe	3 weeks (Q1)	12 years (Q2)
Someone tells you that your hair looks strange	3 weeks (Q1)	6 years (Q2)
Hear a clerk at a grocery store make a rude comment to you	4 days (Q1)	3 years (Q2)

NOTE: Questionnaire version is indicated in parentheses; Q1 = Questionnaire 1, Q2 = Questionnaire 2.

APPENDIX B
Events for Study 3

High frequency, high desirability, high controllability

Getting a kiss on the cheek
Feeling one's life is "going in the right direction"
Having a friend return the money he or she owes you
Having relatives greet you warmly at a family gathering
Having someone say you smell good
Sleeping peacefully for a night
Taking a hot shower/bath on a very cold day
Having someone smile at you as you walk by

High frequency, high desirability, low controllability

Hearing a dirty joke that makes you laugh
Having someone hold the door open for you
Having a new neighbor come over to introduce himself
Hearing that one's favorite musical group will release a new album next month
Hearing a favorite song on the radio
Seeing an old friend on the street
Being proposed to
Reading a column in the newspaper that makes you laugh hysterically

High frequency, low desirability, high controllability

The store closes just as you arrive
Bouncing a check
Tearing a hole in your clothes
Finding rotten food in the refrigerator
Dialing the wrong telephone number
Having your stomach growl incessantly
Getting sick from drinking too much
Using a public restroom

High frequency, low desirability, low controllability

Getting into an auto accident
Get a paper cut
Having your computer crash in the middle of your paper
Witness a couple flirting
The music played by a neighbor is too loud
Being mistaken for another person
Being heartbroken after a romantic breakup
The water in the shower is very cold

Low frequency, high desirability, high controllability

Having a child who later becomes a successful professional athlete
Being treated to an elegant dinner by a friend
Receiving mention in the newspaper for lifetime accomplishments
Write a song for a friend
Purchasing your dream home
Taking a 6-day (or longer) vacation
Receiving an unexpected and substantially large tax refund
Ride a train

Low frequency, high desirability, low controllability

Win a car in the lottery
Find a $20 bill on the ground
Being hugged by a celebrity
The person in front of you at the grocery store decides to pay for your groceries
Meet the President of the United States
Seeing a comet in the sky
Winning a sweepstakes
Win free tickets to a hockey game

Low frequency, low desirability, high controllability

Falling down a flight of stairs
Marriage ends in a bitter divorce
Getting electrocuted in a bathtub
Gain 80 pounds
Drink goat's milk
Getting stitches
Developing a stomach ulcer
Developing an excruciating toothache

Low frequency, low desirability, low controllability

Being shot in the abdomen
Developing arthritis
Being asked to donate an organ
Witnessing the robbery of a convenience store
Being falsely accused of a serious crime
Receiving a dog bite
Going blind
Witnessing a severe tornado destroy several homes and buildings

NOTE: The events for Study 3 were selected with the help of frequency, desirability, and controllability data collected in pilot testing. From the 128 pilot-tested events, 64 events were selected to roughly represent each of the eight combinations of high and low frequency, desirability, and controllability. Eight events represented each of the eight combinations.

NOTES

1. The average magnitude of the effect sizes for the time frame manipulation was approximately the same for the most undesirable events (contracting a fatal disease, marriage will end in a bitter divorce, being fired/laid off from a job; $M\ d = 0.60$) as for the less undesirable events (waitress spills food order on your table, receive a call from a telemarketer, find a wart on your toe, someone tells you that your hair looks strange, clerk at the grocery store makes a rude comment to you; $M\ d = 0.56$).

2. Analyses of standardized frequency responses (standardized separately within each of the 16 events) supports the same conclusion; the standardized scores were significantly lower when events were described in a short ($M = -0.54$, $SD = 0.31$) rather than long time frame ($M = 0.54$, $SD = 0.52$), $F(1, 18) = 102.25$, $p < .001$. The Time Frame × Desirability interaction was not significant, $p > .10$, and because of the standardization within events, the desirability main effect was not significant. However, analyses on the raw data show that the desirable events received lower frequency estimates ($M = 34.90$, $SD = 9.80$) than did the undesirable events ($M = 40.99$, $SD = 10.42$), $t(19) = 2.65$, $p < .05$.

3. Pretest ratings of event frequency were also highly related to the average absolute estimates for both self and others, both rs > .80. Because the size of these relations were similar for self and others, it is unlikely that participants constructed idiosyncratic definitions of event frequency for self and others. Rather, it appears that frequent events were perceived to increase both self and others' absolute likelihood of experiencing an event equally.

REFERENCES

Alicke, M. D., Klotz, M. L., Breitenbrecher, D. L., Yurak, T. J., & Vredenburg, D. S. (1995). Personal contact, individuation, and the better-than-average effect. *Journal of Personality and Social Psychology, 68*, 804-825.

Blanton, H., Axsom, D., McClive, K. P., & Price, S. (2001). Pessimistic bias in comparative evaluations: A case of perceived vulnerability to the effects of negative life events. *Personality and Social Psychology Bulletin, 27*, 1627-1636.

Dunning, D. (2000). Social judgment as implicit social comparison. In J. Suls & L. Wheeler (Eds.), *Handbook of social comparison: Theory and research* (pp. 353-378). New York: Kluwer Academic/Plenum.

Dunning, D., & Cohen, G. L. (1992). Egocentric definitions of traits and abilities in social judgment. *Journal of Personality and Social Psychology, 63*, 341-355.

Eiser, R. J., Pahl, S., & Prins, Y. (2001). Optimism, pessimism, and the direction of self-other comparisons. *Journal of Experimental Social Psychology, 37*, 78-84.

Fox, C. R., & Levav, J. (2000). Familiarity bias and belief reversal in relative likelihood judgment. *Organizational Behavior and Human Decision Processes, 82*, 268-292.

Helweg-Larsen, M., & Shepperd, J. (2001). Do moderators of the optimistic bias affect personal or target risk estimates? A review of the literature. *Personality and Social Psychology Review, 51*, 74-95.

Hoorens, V. (1995). Self-favoring biases, self-presentation, and the self-other asymmetry in social comparison. *Journal of Personality, 63*, 793-817.

Klar, Y., & Giladi, E. E. (1999). Are most people happier than their peers, or are they just happy? *Personality and Social Psychology Bulletin, 25*, 585-594.

Klar, Y., Medding, A., & Sarel, D. (1996). Nonunique invulnerability: Singular versus distributional probabilities and unrealistic optimism in comparative risk judgments. *Organizational Behavior and Human Decision Processes, 67*, 229-245.

Krueger, J. (2000). The projective perception of the social world: A building block of social comparison processes. In J. Suls & L. Wheeler (Eds.), *Handbook of social comparison: Theory and research* (pp. 323-351). New York: Kluwer Academic/Plenum.

Krueger, J., & Clement, R. W. (1994). The truly false consensus effect: An ineradicable and egocentric bias in social perception. *Journal of Personality and Social Psychology, 67*, 596-610.

Kruger, J. (1999). Lake Wobegon be gone! The "below average effect" and the egocentric nature of comparative ability judgments. *Journal of Personality and Social Psychology, 77*, 221-232.

McKenna, F. P., & Albery, I. P. (2001). Does unrealistic optimism change following a negative experience? *Journal of Applied Social Psychology, 31*, 1146-1157.

Middleton, W., Harris, P., & Surman, M. (1996). Give'em enough rope: Perception of health and safety risks in bungee jumpers. *Journal of Social and Clinical Psychology, 15*, 68-79.

Perloff, L. S., & Fetzer, B. K. (1986). Self-other judgments and perceived vulnerability to victimization. *Journal of Personality and Social Psychology, 50*, 502-510.

Price, P. C., Pentecost, H. C., & Voth, R. D. (2002). Perceived event frequency and the optimistic bias: Evidence for a two-process model of personal risk judgments. *Journal of Experimental Social Psychology, 38*, 242-252.

Regan, P., Snyder, M., & Kassin, S. (1995). Unrealistic optimism: Self-enhancement or person positivity? *Personality and Social Psychology Bulletin, 21*, 1073-1082.

Rothman, A., Klein, W., & Weinstein, N. D. (1996). Absolute and relative biases in estimations of personal risk. *Journal of Applied Social Psychology, 26*, 1213-1236.

Suls, J., Lemos, K., & Stewart, H. (2002). Self-esteem, construal and comparisons with self, friends, and peers. *Journal of Personality and Social Psychology, 82*, 252-261.

Taylor, S. E., & Brown, J. D. (1988). Positive illusions and well-being revisited: Separating fact from fiction. *Psychological Bulletin, 116*, 21-27.

Weinstein, N. D. (1980). Unrealistic optimism about future life events. *Journal of Personality and Social Psychology, 39*, 806-820.

Weinstein, N. D. (1982). Unrealistic optimism about susceptibility to health problems. *Journal of Behavioral Medicine, 5*, 441-460.

Weinstein, N. D. (1987). Unrealistic optimism about susceptibility to health problems: Conclusions from a community-wide sample. *Journal of Behavioral Medicine, 10*, 481-500.

Weinstein, N. D., & Lachendro, E. (1982). Egocentrism as a source of unrealistic optimism. *Personality and Social Psychology Bulletin, 8*, 195-200.

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