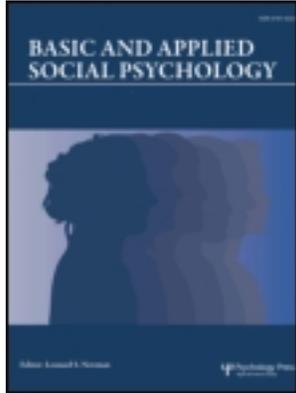


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Unrecognized Changes in the Self Contribute to Exaggerated Judgments of External Decline

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People commonly perceive social conditions as declining. We propose that perceptions of social decline are often a consequence of a bias whereby people mistake change in themselves for change in the world. The present research demonstrates that common personal changes such as the parenthood transition (Studies 1–2) and physical aging (Study 3) may increase a person’s sensitivity to dangers and thereby contribute to an illusory perception that external dangers are increasing. We use experimental models of the hypothesized change processes to test whether these common personal changes may contribute to judgments of social decline.

The humour of blaming the present, and admiring the past, is strongly rooted in human nature, and has an influence even on persons endowed with the profoundest judgment and most extensive learning.—David Hume (1777/1987, p. 464)

Our collective memory is often nostalgic. We remember the past as a simpler, more humane world where fundamental values were widely shared, people did not have to worry about locking their front doors, community spirit was still quite vital, popular music and movies provided wholesome entertainment, and athletes and political leaders were heroic in stature. By contrast, the present world is seen as a more dangerous, morally confused, self-centered place. The theme of social decline is prominent in everyday speech when people complain that “things aren’t the way they used to be” and “it’s not like it was in the good old days.”

The impression that social conditions are declining is common both cross-culturally and throughout history (Herman, 1997). In Anglo-American history complaints

about societal decline can be traced through every generation back to the original English settlement at Jamestown (Armory, 1960). This theme is also prominent in the literatures of cultures as diverse as Confucian China; the Aztec empire; and ancient Egypt, Israel, and Rome (Herman, 1997).

The recurring tendency to perceive decline from one generation to the next suggests that such perceptions are exaggerated. What might account for illusory perceptions of decline? To address this question we draw on previous work that identifies a determinant of illusory perceptions of change, namely, changes in one’s self that alter one’s interpretations of external conditions. Here we investigate whether this mechanism might help explain the widespread tendency to perceive the world as changing for the worse.

ILLUSORY PERCEPTIONS OF DECLINE

Comparing public opinion about social and moral decline with objective measures suggests that perceptions of decline are both exaggerated and widespread. Perceptions that society is becoming more dangerous are particularly

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common. For example, survey respondents who evaluated the societal risks associated with 90 technologies perceived the majority (69%) to be increasing in risk (Slovic, Fischhoff, & Lichtenstein, 1980), despite the fact that numerous social indicators suggest dramatic improvements in safety and well-being (Caplow, Hicks, & Wattenberg, 2001). Also, even though the United States experienced the most impressive reduction in crime rates since World War II during the 1990s (LaFree, 1999), 73% of survey respondents believed that crime had increased during that decade (Gilens, 2001).

Perceptions of decline in morality are also widespread. For example, in a 1980 survey, "moral decline" was among the top 10 themes listed as the most important event or change of the past 50 years (Schuman & Scott, 1989). More recently, in a 1999 NBC News/*Wall Street Journal* poll "social and moral values in the United States" were judged by 67% of respondents to be higher when respondents were growing up than today. From 2002 to 2009 a solid majority (67–82%) of respondents to the annual Gallup May Values poll judged that moral values in America are "getting worse." The widespread impression that morality is declining is hard to reconcile with many benevolent changes in behavior and attitudes over the last few decades, including increased individual and corporate charitable giving (AAFRC Trust for Philanthropy, 2008), increased government investment in social services and public approval of these investments (Cerulo, 2002), increased volunteerism (Ladd, 1999), and increased commitment to racial equality (Schuman, Steeh, & Bobo, 1997).

These data suggest that people perceive decline in safety and morality and that these perceived changes are sometimes exaggerated. In offering an explanation for this phenomenon we turn to a general bias that leads people to perceive change in the world when none has occurred.

MISTAKING CHANGE IN THE SELF FOR CHANGE IN THE WORLD

Changing man cannot know changing things.—Michel de Montaigne (1958, p. 455)

Illusory perceptions of change in the world can result from changes within individuals that cause them to attend to different information: people often mistake changes in themselves for changes in the world (Eibach, Libby, & Gilovich, 2003). By "changes in the self" we refer to any changes occurring within perceivers that alter their perceptions of the world. These changes could be relatively fleeting such as the fluctuations in arousal and mood that occur over the course of a day, or more enduring, such as the acquisition of basic concepts in childhood. They also may be relatively narrow in scope,

such as the activation of a particular concept, or more global, such as the activation of a mind-set. They also may be normative changes, such as socialization into new roles in adulthood, or more idiosyncratic, such as the adaptation to a new material lifestyle that lottery winners experience (Brickman, Coates, & Janof-Bulman, 1978). All of these various types of self-change share in common the potential to change a person's sensitivity to or construal of information in the external world, so that after undergoing these changes, people perceive features of the world differently than they did before, even if those features of the world remained constant. If people do not recognize that these internal changes alter their perceptions of the external world, then they may erroneously conclude that the world has changed when it is actually the perceivers themselves that have changed. For example, individuals whose diets have become more restrictive over time often become more sensitized to the temptations of unhealthy foods. As a result, they perceive a greater increase in unhealthy food advertisements over that period compared to those whose diets have remained stable (Eibach et al., 2003). When people acquire new information about an author's identity that changes their interpretations of his work, they perceive a change in the themes within the work itself (Eibach et al., 2003).

The tendency to mistake change in oneself for change in the world is influenced by two underlying biases: naive realist interpretations of perceptual experiences and intuitive theories of self-stability. Naive realism, the fundamental conviction that one's perceptual experiences are direct, veridical representations of the external world (L. Ross & Ward, 1995), contributes to mistaking change in oneself for change in the world: When one assumes one's perceptions are veridical, changes in perceptions will reflexively be interpreted as changes in the objects of perception rather than self-changes. It takes additional thought to overcome this initial realist interpretation and consider the possibility that one's perceptions may be influenced by changes in one's own perspective (Gilbert & Gill, 2000). Consistent with this, experimental manipulations that highlight relevant self-changes prevent people from overestimating change in the external world, but not when people are distracted by an attention-demanding secondary task (Eibach et al., 2003). Even when people overcome their initial realist interpretations and take into account the possibility that self-changes might affect their perceptions, the well-documented tendency to overestimate the stability of one's own attributes (e.g., Goethals & Reckman, 1973; M. Ross, 1989) causes people to underestimate self-change as a potential source of changed perceptions. Thus, experimentally increasing peoples' perceptions of self-change reduces their tendency to overestimate change in the external world (Eibach et al., 2003).

The mechanism that leads people to mistake change in the self for change in the world is related to the mechanism that produces the change-of-standard effect in memory (Higgins & Liberman, 1994; Higgins & Lurie, 1983; Higgins & Stangor, 1988). In this change-of-standard effect, when people's standards change they do not update their stored impression of a past stimulus to reflect their new standard; instead they change their memory for the details of the past stimulus to make their stored impression consistent with the new standard. For example, a college student may have higher standards for academic quality than she did in high school but she may not change her impression that a term paper she wrote in high school was brilliant; rather she may distort her memory for the contents of that paper to make the impression of brilliance fit with her current, more exacting academic standards. This may be why college students are often shocked when they go back and actually reread one of their favorite high school term papers. Research on this change-of-standard effect has examined its effects on memory accuracy. Here we examine the related question of how the failure to recognize changes in one's own perspective or standards might contribute to illusory perceptions of change in the world.

ACCOUNTING FOR ILLUSORY PERCEPTIONS OF DECLINE

The process of mistaking change in oneself for change in the world may help explain exaggerated perceptions of increasing danger and immorality if many common changes people experience as they mature cause them to be more alert to information about societal threats. Whereas Eibach et al. (2003) speculated that the process of mistaking change in the self for change in the world might contribute to pervasive illusions of social and moral decline, they did not systematically test this hypothesis. The only relevant evidence that they provided for this hypothesis was correlational data showing that parents perceive an illusory increase in crime rates corresponding to the timing of their transition to parenthood. The present research builds upon this previous work to more systematically test whether unrecognized changes within perceivers might account for illusory perceptions of decline in the external world.

In the present research we explore how common changes in adulthood relate to perceptions of change in the external world. We argue that these changes should make people more aware of dangers in the world. Thus, we predict that not only will people who experience these changes perceive illusory change in the world but it will often be change for the worse. We tested our hypothesis in lab experiments that modeled the hypothesized change processes. The first two studies focus on the

transition to parenthood, examining how this transition causes a person to attend more to dangers. If parents fail to take into account this change in their own vigilance, they may exaggerate the extent to which external conditions have become more dangerous. Physical aging is another relevant change that could contribute to perceptions of societal decline. Aging is typically accompanied by physical changes, such as slowing of reflexes, that may cause a person to feel more vulnerable or frustrated in certain everyday situations. Study 3 examines whether people confuse such changes in their own physical abilities with decline in the world. By examining these two very different types of personal changes—a major role transition and a physical change—we illustrate the diverse ways that adult experiences may lead people to attend more vigilantly to information about threats and thus how the process of mistaking change in the self for change in the external world can contribute to exaggerated perceptions of increasing social danger.

STUDY 1

Parenthood is one of the most stressful role transitions that many people experience in life (Deater-Deckard, 2004). One reason may be that the experience of becoming a parent requires a person to become more aware of various types of threats and dangers. Human babies are born at an especially immature phase of development, and this immaturity persists for a prolonged postnatal period. Consequently, a parent's role entails looking out for the welfare of highly vulnerable and dependent offspring. Indeed, parents' fears for children's safety typically exceed their fears for themselves, and fears for children's safety are more predictive of behavior and attitudes than are personal fears (Warr & Ellison, 2000).

Many people become parents at some point in their lives. If the transition to parenthood entails becoming sensitized to threatening information that was previously ignored, and if parents do not take into account this personal change, then the parental transition may contribute to exaggerated beliefs in social decline. Consistent with this, correlational analyses show that when parents are asked to estimate historical trends in the prevalence of crime they tend to perceive an increase that coincides with their transitions to parenthood, even during periods when crime had dramatically decreased (Eibach et al., 2003). Studies 1 and 2 were designed to experimentally investigate the causal influence of the transition from a nonparental to a parental perspective in producing illusory perceptions of increasing external danger.

Study 1 is premised on the assumption that parents will be especially likely to adopt a protective parental mind-set when their parental role is made salient.

Priming a relationship automatically activates goals that the person pursues in the context of that relationship (e.g., Eibach & Mock, 2011; Fitzsimons & Bargh, 2003). The present study capitalizes on this role priming effect in order to test whether changes in the salience of the parental role might cause people to perceive change in the dangerousness of external stimuli.

Study 1 participants compared the dangerousness of two lists of activities, products, and social conditions that could be perceived as dangerous. However, we manipulated whether or not participants experienced a change in the salience of their parental role during the course of evaluating the lists. Participants were asked to indicate their parental status either before reading either of the lists or after reading the first list but before reading the second. We predicted that increasing the salience of an individual's parental role in between his or her reading of the lists would cause that individual to perceive an increase in the dangerousness of the second list items compared to the first list items. We predicted no significant change in perceptions of danger among nonparents or parents who experienced no change in the salience of their parental role.

Method

Participants. Ninety-four participants (60.6% parents; 60.6% female) were recruited at a summer fair in the northeastern United States and participated in exchange for credit with fair vendors.

Procedure. Participants read two lists each consisting of 15 activities, products, and social conditions that could be perceived as dangerous (e.g., street drugs, secondhand smoke). Participants were told that their task was to assess the degree of risk associated with each item on a scale ranging from 0 (*little or no risk to society*) to 3 (*high risk to society*). The order of the lists was counterbalanced.

Participants responded to a demographic sheet that included the question, "Are you a parent?" Participants responded by circling either "yes" or "no." The key manipulation involved the position of this demographics sheet. Participants received it either before reading either of the lists (*beginning* condition) or after the first list but before the second list (*between* condition). For the dependent measure participants answered four questions comparing the relative danger of the lists. Specifically, participants judged whether the items on the first list were more or less dangerous, more or less threatening, more or less risky, and more or less harmful than the items on the second list. These comparisons were made on scales ranging from -2 (*items on List 1 were much more dangerous/threatening/risky/harmful than items on List 2*) to $+2$ (*items on List 1 were much*

less dangerous/threatening/risky/harmful than items on List 2).

Results and Discussion

If a change in the salience of the parental role influenced how parents construed the items on List 2 compared to List 1, as we propose, then the average danger ratings for the items on List 2 should be higher than the average for List 1 for participants who had their parental role primed between the lists but not for those whose role was primed before reading either list. To test this, we averaged participants' ratings of the risk associated with the items on each list and subtracted the average for the first list from the average for the second list. We submitted this measure of differential construal of the list items to a 2 (parental status: nonparent vs. parent) \times 2 (priming condition: beginning vs. between) \times 2 (list order: Order A vs. Order B) analysis of variance (ANOVA), obtaining a significant interaction between parental status and priming, $F(1, 86) = 6.18, p < .05$, and no other significant effects. Simple effects tests revealed that for parents there was a significantly greater increase in the danger ratings of the second list relative to the first list in the *between* condition ($M = 0.13, SD = 0.33$) than in the *beginning* condition ($M = -0.13, SD = 0.34$), $F(1, 86) = 8.42, p < .05$. For nonparents there was no significant effect of priming condition on the relative danger ratings of the two lists (*between*: $M = -0.09, SD = 0.38$; *beginning*: $M = -0.01, SD = 0.31$), $F(1, 86) < 1$.

Next, to test our critical hypothesis, we explored whether participants perceived a change in the level of danger of the second list compared to the first by examining participants' ratings of the degree to which the items on List 2 were more or less dangerous, threatening, risky, or harmful than those on List 1. We averaged participants' comparative judgments of the danger, threat, risk and harm ($\alpha = .84$) to create an overall index of perceived change in the dangerousness of the lists and submitted these ratings to a 2 (parental status: nonparent vs. parent) \times 2 (priming: beginning vs. between) \times 2 (list order: Order A vs. Order B) ANOVA, obtaining a significant interaction between parental status and priming, $F(1, 86) = 4.66, p < .05$, and no other significant effects. As predicted, simple effects tests revealed that parents perceived a significantly greater increase in danger associated with the second list when they experienced a change in the salience of their parental status between reading the lists ($M = 0.41, SD = 0.76$) than when they experienced no change in the salience of their parental status ($M = -0.13, SD = 0.75$), $F(1, 86) = 6.74, p < .05$. By contrast, nonparents' ratings of change in the dangerousness of the lists were unaffected by the change in salience of their nonparental status (*between*: $M = -0.16, SD = 0.95$; *beginning*: $M = 0.09, SD = 0.87$), $F < 1$.

STUDY 2

Study 1 showed that changing the salience of their parental role caused parents to perceive an increase in the dangerousness of external stimuli, presumably because this manipulation activated the more vigilant mind-set that typically accompanies parenthood. Among nonparents, manipulating the salience of parental status did not have the same effect, presumably because the identity of being a nonparent is irrelevant to being attentive to dangers. Study 2 was intended to conceptually replicate Study 1 but without relying on preexisting differences in parental status. We designed an experimental analogue of the process of transitioning from a nonparental to a parental perspective and measured the effects on perceptions of change in the prevalence of threatening stimuli. Specifically, we focused on a task modern parents must perform routinely in everyday life: carefully monitoring media content to protect their children from exposure to violent and disturbing imagery.

Method

Participants. Sixty-six undergraduates (56.1% female) participated in exchange for \$5 or course credit in introductory psychology.

Procedure. Participants viewed two blocks of images each containing 70 stimuli from the International Affective Picture System image bank (Lang, Bradley, & Cuthbert, 1999). Each block contained 38 disturbing images and 32 pleasant/neutral stimuli. Within each block, images were presented one at a time on a computer screen. All participants viewed both stimulus blocks, with the order counterbalanced between participants.

The crucial manipulation involved two different tasks that participants could be asked to complete while viewing each block. In the *parental perspective* task participants were instructed to censor the images for a class of fourth-grade girls who, they were told, would eventually be viewing the images designated as acceptable. This task required participants to assume a quasi-parental role, trying to protect children from possible harm. In the *peer perspective* task participants were instructed to censor the images for a sample of undergraduate peers who would eventually be viewing the images they designated as acceptable. In both versions, participants censored images by pressing a key to indicate whether the image was acceptable or unacceptable for the intended audience.

The task assignments were varied in three conditions. In the *parent to peer perspective* condition participants completed the parental perspective task during the first block and then the peer perspective task during the second block. In the *continuous parent perspective*

condition participants completed the parental perspective task in both blocks. In the *peer to parent perspective* condition participants completed the peer perspective task in the first block and then the parental perspective task during the second block. This final condition was the critical condition designed to mimic the transition to parenthood, with participants transitioning from a non-parental to a parental perspective.

After viewing the images in each block, participants answered three questions tapping into their perceptions of change in the harmfulness of the images from the first to the second block. Specifically, participants judged whether the images in the second block were, on average, more or less violent, disturbing, and frightening than the images in the first block. These three comparisons were made on 5-point scales ranging from -2 (*the second block was much less violent/disturbing/frightening*) through 0 (*neither block was more violent/disturbing/frightening*) to $+2$ (*the second block was much more violent/disturbing/frightening*). These ratings were averaged to create a composite measure of perceived change in disturbing content ($\alpha = .79$).

To more sensitively measure whether participants attributed any perceived change in the image blocks to actual changes in the stimuli, rather than changes in their own perspective, participants were asked to compare the potential effects of exposure to each block of images on a group of fourth-grade girls. Specifically, participants assessed which block of images would be more likely to upset these girls, which block would be more likely to harm these girls, which block would be more inappropriate to show these girls, and which block would be more likely to cause nightmares. Each rating was made on a 5-point scale ranging from -2 to $+2$, where negative ratings indicate greater negative impact of the first block, 0 indicates no difference in impact, and positive numbers indicate greater negative impact of the second block. These ratings were averaged to create a composite measure of perceived change in the potential harmfulness of the stimuli ($\alpha = .81$). These ratings were highly correlated with the ratings of change in disturbing content ($r = .78, p < .01$). However, in the analyses that follow we examine the harmfulness ratings separately from the disturbingness ratings because the harmfulness ratings ask participants to make predictions about the consequences of the images and thus are a potentially more useful index of whether participants believe that the change they perceive in the image qualities is an inherent feature of the images as opposed to a mere change in their subjective impressions.

Results and Discussion

We expected that participants would reject more images when they were judging their acceptability for young

girls than when they were judging their acceptability for college students. Thus, participants who switched from the peer perspective to the parent perspective task should reject more images in the second block than they did in the first block, participants who maintained the parental perspective during both blocks should reject a similar number of images in each block, and participants who switched from the parental to the peer perspective should reject more images in the second block than they did in the first block. To test these predictions, we submitted the number of images participants rejected to a mixed-model ANOVA with stimulus block as a within-participants variable and condition (*parent to peer*, *continuous parent*, *peer to parent*) and block order (*Block A first* vs. *Block B first*) as between-participants variables, obtaining a significant main effect of condition, $F(2, 60) = 5.67$, $p < .01$, and a significant interaction between condition and stimulus block, $F(2, 60) = 75.91$, $p < .001$. Follow-up simple effects tests revealed that participants who changed from a peer's perspective to a parent's perspective rejected more images in the second block ($M = 35.95$, $SD = 4.52$) than they did in the first block ($M = 21.91$, $SD = 7.36$), $F(1, 60) = 80.73$, $p < .001$, participants who maintained a parent's perspective during both trials rejected a similar number of images in the second block ($M = 34.32$, $SD = 4.77$) as they did in the first block ($M = 33.23$, $SD = 5.72$), $F < 1$, and participants who changed from a parent's perspective to a peer's perspective rejected fewer images in the second block ($M = 23.36$, $SD = 8.63$) than they did in the first block ($M = 36.55$, $SD = 4.61$), $F(1, 60) = 71.11$, $p < .001$.

Next, we submitted participants' ratings of change in the disturbing content of the stimuli to a 3 (condition: *parent to peer*, *continuous parent*, *peer to parent*) \times 2 (block order: *Block A first* vs. *Block B first*) ANOVA, obtaining a significant main effect of condition, $F(2, 60) = 3.46$, $p < .05$, and no other significant effects. We then conducted a series of planned linear contrasts to examine our prediction that participants in the critical condition (*peer to parent*) would show a greater change in perceptions of the pictures than would those in either control condition (*continuous parent*, *parent to peer*), averaging across the two block order conditions. These analyses revealed, as predicted, that participants who changed from a peer's perspective to a parent's perspective perceived a greater increase in disturbing content ($M = 0.30$, $SD = 0.66$) than participants in either of the other conditions: *parent to peer* ($M = -0.23$, $SD = 0.73$), $F(1, 60) = 6.18$, $p < .05$; *continuous parent* ($M = -0.12$, $SD = 0.69$), $F(1, 60) = 3.94$, $p = .05$.

Next, we submitted participants' ratings of change in the potential consequences of the stimuli to a 3 (condition) \times 2 (block order) ANOVA, obtaining a significant main effect of condition, $F(2, 60) = 3.41$, $p < .05$, and no

other significant effects. Again a set of planned contrast analyses revealed that, as predicted, participants who changed from a peer's perspective to a parent's perspective perceived a greater increase in potential harmfulness ($M = 0.27$, $SD = 0.51$) than did participants in the other conditions: *parent to peer* ($M = -0.22$, $SD = 0.79$), $F(1, 60) = 6.01$, $p < .05$; *continuous parent* ($M = -0.12$, $SD = 0.61$), $F(1, 60) = 3.99$, $p = .05$.

Although participants in all conditions saw the same images, participants who transitioned from a nonparental to a parental task experienced a change in perspective that led them to perceive greater increases in disturbing content and potential harmfulness of the images. This difference in ratings between conditions can be explained by those who transitioned from a nonparental to a parental task becoming more attentive to threats presented by the images when viewing the second set, consistent with their new role of protecting fourth-grade children.

Previous research showed that people perceive an increase in crime coinciding with the timing of their transition into parenthood (Eibach et al., 2003). For instance, people who first became parents during the 1990s perceived an increase in crime in that decade even though crime rates were actually declining during that decade. Whereas those previous findings were correlational, the results of Studies 1 and 2 provide evidence that adopting a parent's perspective can cause people to perceive an illusory increase in the dangerousness of external stimuli.

It is possible that the effects of parental role priming that we observed in these studies are not unique to the parental role and that similar effects would be found if any role that involves heightened responsibility had been primed. In general when people take on duties and responsibilities they shift into a prevention-focused mind-set that increases their attentiveness to risks and dangers (Higgins, 1998). So, we might expect that the process of mistaking change in the self for change in the world that we emphasize here would lead people to perceive an illusory increase in risks and dangers after they shift into any roles that involve heightened responsibilities. Such an account would still link the process of mistaking change in the self for change in the world to the widespread phenomenon of perceiving social decline because people tend to acquire greater responsibilities as they mature and thus they should tend to perceive greater risks and danger in adulthood than they did in their youth. If people do not appreciate how their own heightened responsibilities increase their sensitivity to dangers, then they may erroneously conclude that dangers are more prevalent in their adult years than they were in their youth. Parenting thus may be one example of the greater burden of responsibilities that cause people to see the world as a more threatening place in adulthood than they perceived growing up.

Although we suspect that the effects we obtained here might generalize to other roles that involve heightened responsibilities, there are reasons to believe that the transition to the parental role might be particularly likely to heighten a person's vigilance given that it not only involves heightened responsibility but also specifically involves the responsibility of looking out for the safety of a more vulnerable person. Thus, this particular role is likely not only to heighten attentiveness to dangers but also to increase the range of objects and events that a person categorizes as dangerous. For example, to a nonparent, even a nonparent with many responsibilities that do not involve caring for children, household cleansers are just mundane objects, but from a parent's perspective these same cleansers are transformed into potentially lethal poisons that need to be stored away outside of a child's reach. This may explain why, in Study 2, taking on the responsibility of looking out for the interests of young children led to an illusory perception of increased danger, whereas taking on the responsibility to look after the interests of same age peers did not.

Major role transitions, such as the transition to parenthood, are a feature of the life course that could alter a person's construal of the world and thus contribute to illusory perceptions of external change. But as people mature they not only take on new roles but also experience various bodily changes that could alter their perceptions of the world and thus contribute to illusory perceptions of change in the external world. The next study investigates how common bodily changes people experience as they age can make them feel more vulnerable to threats and thus contribute to exaggerated perceptions of increasing societal danger if they fail to recognize how their own bodily changes alter their perceptions of the world.

STUDY 3

As one's physical vigor deteriorates with age, the world may be experienced as a more frustrating place: Society may seem to be getting more fast-paced as one's own speed and agility decline, violent crime may seem increasingly prevalent as a person feels more physically vulnerable, and the world may seem less hospitable as a person becomes less physically able to navigate around its obstacles. If changes in one's experience of the world tend to be mistaken for changes in the world itself, then the physical changes that accompany aging could help explain people's exaggerated perceptions of social decline.

Existing research suggests that people sometimes draw erroneous conclusions about the external world as a consequence of their own declining physical abilities. For instance, hearing loss is associated with

paranoia because people who are unaware that they are losing their hearing believe that others are whispering about them behind their backs (Zimbardo, Andersen, & Kabat, 1981). In Study 3 we tested whether declining physical abilities would lead to perceptions of social decline. We capitalized on the fact that reaction times and perceptual speed tend to slow with age (Verhaeghen & Salthouse, 1997). Specifically, we hypothesized that as individuals' own driving reflexes slow, they would experience driving as an increasingly dangerous activity. If people do not appreciate that the slowing of their own reflexes is the source of these changing perceptions, then they may conclude that other drivers are becoming increasingly aggressive and reckless. If so, we should find that participants perceive a greater increase over time in the aggressiveness of other drivers the more their own reflexes have declined with age. If this result is a consequence of mistaking change in oneself for change in the world, then the association should be weakened when participants are prompted to take into account self-change as a source of changing perceptions by judging change in their own reflexes before they judge change in the behavior of other drivers. This is a good context to study illusory perceptions of social decline because the belief that other drivers have become more aggressive is widespread even though there is no evidence that driving has changed in this way (Fumento, 1998).

Method

Participants. Ninety adults (56.7% female, $M_{\text{age}} = 46.53$, $SD_{\text{age}} = 10.93$) were recruited at public locations in the vicinity of a university campus located in the northeastern United States.

Materials and procedure. Participants completed one of two versions of a questionnaire that asked about changes in their own physical abilities and changes in the behavior of other drivers. The only difference between the versions was the order in which these questions were presented. In the external-first condition, participants were first asked to judge the extent to which the recklessness and aggressiveness of other drivers had changed over the past 10 years. Participants recorded their responses to each question by circling a number on a scale ranging from -5 (*drivers today are much less aggressive/reckless*) through 0 (*no change*) to $+5$ (*drivers today are much more aggressive/reckless*). Ratings on these items, $r(88) = .94$, $p < .01$, were averaged to create an index of perceived external change. After completing the external-change judgments, participants were then asked to judge the extent to which their own driving reflexes and coordination had changed over the past

10 years. Participants recorded their responses to each question by circling a number on a scale ranging from -5 (*my driving reflexes today are much slower/my coordination today is much worse*) through 0 (*no change*) to $+5$ (*my reflexes today are much faster/my coordination today is much better*). Ratings on these items, $r(88) = .89$, $p < .01$, were averaged to create an index of perceived self-change. In the self-first condition, participants first completed the questions about self-change and then completed the questions about external change.

Results and Discussion

We predicted that decline in participants' own physical abilities would be associated with perceptions of increased recklessness of other drivers, but only when participants made these judgments about other drivers without first considering the changes in their own physical abilities. Indeed, focusing on the external-change first condition, the more participants' own physical abilities had declined the greater increase they perceived in the recklessness of other drivers, $r(43) = -.30$, $p < .05$. However, when participants were asked about change in their own reflexes first, the correlation between reported self-change and perceived external change was no longer significant, $r(43) = -.02$, $p > .1$.

Further, inducing participants to take decline in their own abilities into account before judging changes in other drivers significantly reduced their perceptions of increased aggressiveness in other drivers ($M = 1.07$, $SD = 1.79$), relative to when participants made judgments about other drivers first ($M = 1.95$, $SD = 1.73$), $t(88) = 2.39$, $p < .05$. The order manipulation did not influence participants' perceptions of decline in their own driving abilities (external-change first: $M = -0.24$, $SD = 1.23$; self-change first: $M = -0.37$, $SD = 1.47$), $t(88) = 0.43$, $p > .1$.

In the present study we directly manipulated whether participants took into account relevant self-changes by asking them to explicitly consider how their own driving reflexes had changed before asking them how other drivers' recklessness had changed. However, indirect methods for manipulating awareness of self-change may also be effective for debiasing people from mistaking change in the self for change in the world. For example, awareness of relevant self-changes might be enhanced using methods that induce general self-awareness, such as placing participants in front of a mirror when they judge change in other's behavior. Awareness of self-changes could also be manipulated experientially by putting participants in situations that mimic everyday experiences in which people encounter bodily or perceptual feedback that they interpret as signs they are getting older, such as difficulty retrieving

information from memory or straining their eyes to read text (Eibach, Mock, & Courtney, 2010).

GENERAL DISCUSSION

Together, the studies reported here link common personal changes in adulthood with perceptions of external decline. Experimental models of the transition to parenthood (Studies 1 and 2) showed that when people shift from a nonparental to a parental role, they perceive an illusory increase in external danger. Study 3 showed that when people neglect to consider how their own driving reflexes have declined with age, they tend to conclude that other drivers have become more reckless. These results supported our hypothesis that common personal changes may contribute to widespread myths of social decline. Here we elaborate on these findings, considering additional self-changes that could contribute to perceptions of decline as well as implications of the phenomenon for political persuasion.

Other Links Between Common Self-Changes and Perceived Decline

The present studies focus on the effect of changes in the self on perceptions of increased danger. However, the mechanism of mistaking change in the self for change in the world can explain other judgments of social decline. For example, parenthood not only increases attentiveness to danger, it also shifts people from laissez-faire moral standards that only condemn acts that harm others to more paternalistic standards that also condemn acts that violate social norms or intuitive notions of purity (Eibach, Libby, & Ehrlinger, 2009). By widening the scope of morality, the parental role increases the number of acts that are perceived as immoral. If parents do not recognize or neglect to consider how parenthood has altered their moral standards then they may conclude that immorality is increasing in society.

Other common developmental changes might be linked to exaggerated perceptions of decline through the mechanism of mistaking self-change for external change. For instance, there may be a sensitive period of development when people are maximally open to new tastes, styles, and norms (Holbrook & Schindler, 1989; Minoura, 1992; Sapolsky, 1998). After this period ends, people become resistant to novel social stimuli. If people fail to recognize their declining openness to experience, they may conclude that the quality of music is declining, fashion designs are becoming increasingly tacky, and everyday manners are coarsening.

The acquisition of cynical knowledge is another common developmental change that might contribute to the illusion that social conditions are worsening.

Children are often shielded from the darker truths of life (Postman, 1994). It is only with maturity and experience that many people move beyond the optimistic illusions of childhood and realize that bad things sometimes happen to good people, practical decision making often requires opting for the lesser of two evils, the reward does not always go to the most deserving, and there is no guarantee things will turn out for the best in life (Janoff-Bulman, 1992). Experience can be a cruel teacher, and adults are likely to have a more cynical perspective than they had growing up. If people do not realize how this more cynical perspective changes their interpretations of the world, then they may conclude that conditions have actually become more corrupt and unreliable.

Cultural Generality

Ethnographic research suggests that the tendency to mistake self-change for external change is not limited to the culture in which the present research was conducted. For example, in a study of native Tahitians, Levy (1973) reported a widespread illusion among adults that time was speeding up. Levy's informants did not attribute their perceptions of accelerating time to the faster subjective pace of adulthood. Rather, they asserted that time was in fact accelerating. Furthermore, they used the acceleration of time to explain other apparent changes, asserting that children are shorter in the present than they were in the past because nowadays there is less time to grow up. From an outsider's perspective it seems obvious that the apparent acceleration of time and decline in the size of children were due to changes in perspective that adults experienced as they took on adult responsibilities and grew relatively bigger themselves. However, the Tahitians seem to have mistaken these changes in themselves for change in the world and ingeniously combined these two illusory changes together into a unitary account.

Cultures may differ in their susceptibility to mistaking self-change for external change. People in cultures with holistic thought-systems (e.g., East Asian cultures) may be more likely to consider the possibility that changes in their perspective could be a source of changing perceptions because in these cultures people generally tend to be more aware of how the self changes across contexts (Nisbett, Peng, Choi, & Norenzayan, 2001). However, holistic thought-systems also increase the difficulty of distinguishing changes in the figure from changes in the background of a perceptual event (Ji, Peng, & Nisbett, 2000). Because the self is a critical part of the background of perception, confusions of self-changes and external changes might thus be stronger in holistic cultures than in cultures with more analytic traditions. Regardless of

whether and how cultures differ in their susceptibility to this bias they may not differ in the perceptual consequences of the specific developmental transitions studied in this article. Protecting dependent children and declining physical abilities are experienced by people in diverse cultural settings. The ubiquity of myths of social decline might be accounted for by the experiential consequences of these universal developmental changes.

Other Social Psychological Explanations of Illusory Perceptions of Decline

A phenomenon as culturally widespread and stable across generations as the impression that society is declining is likely to have multiple psychological causes. Indeed, it has been suggested that common perceptions of social decline may be due to loss aversion (Schwarz, Wanke, & Bless, 1994), overlooking the relevance of changes in population size when encountering information about increase in the numerical prevalence of a social problem (Silka, 1989), poor retention of variability information (Silka, 1989), and the use of present-day problems as the frame when constructing historical comparisons (Schwarz et al., 1994).

Although exaggerated judgments of social decline may be traced to several different psychological causes, the mechanism studied in this article offers unique insight into why exaggerated judgments of social decline persist even in the face of information about objective trends. People can honestly claim to see more crime, disorder, and immorality today than they did in the past because something truly has changed, namely, their own perspectives. To the extent that exaggerated impressions of decline result from mistaking this change in perspective for external change, raising awareness of relevant self-changes should debias judgments of decline. Indeed, in Study 3 this approach eliminated exaggerated judgments of decline.

Exaggerated Perceptions of Progress?

Although the focus of this article is explaining exaggerated perceptions of decline, people sometimes perceive illusory progress. For instance, people perceive illusory improvements in their relationships (Sprecher, 1999). The phenomenon of mistaking self-change for external change could explain exaggerated perceptions of progress by linking these perceptions to personal changes that cause people to perceive events more favorably over time, such as the greater control over negative emotions that people experience in older adulthood (Carstensen, Fung, & Charles, 2003). It is even possible that the personal changes associated with judgments of societal decline in this article could promote judgments of progress in other contexts. For example, the parenthood

transition could involve increased hopefulness for the future and greater motivation to rationalize inequalities to maintain the belief that one's children are growing up in a just society, which might promote illusory impressions of social improvement.

However, although the mechanism of mistaking self-change for external change could lead to impressions of progress as well as decline, people's overall perception of change in the world should be more strongly influenced by developmental changes that cause them to see things as getting worse than by changes that cause them to see things as improving because negative information generally has a stronger impact on judgment than does positive information (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001; Schwarz et al., 1994). Furthermore, exaggerated perceptions of progress are probably better explained as a product of motivated social cognition rather than the bias of mistaking self-change for external change. For example, the system justification motive (Jost, Banaji, & Nosek, 2004) readily accounts for exaggerated perceptions of social progress. Exaggerated perceptions of decline are less easily explained by such motivational accounts. It is not readily apparent why people would want to perceive illusory increases in crime, degeneration of popular culture, and moral decadence. The process of mistaking change in the self for change in the world may need to be particularly strong to overcome people's motivational biases and produce exaggerated perceptions of decline. Another important reason for focusing on perceptions of decline is the role they play in social movements, a point we explore in the next section.

Illusory Decline and Political Persuasion

Social decline is a prominent theme in the rhetoric of many social movements (Snow, Cress, Downey, & Jones, 1998). Reactionary and nationalist movements in particular are positioned to take advantage of widespread perceptions of social decline to mobilize support for measures to prevent further losses or to restore past glories (Hirschman, 1991). Information that social conditions are deteriorating causes people to adopt more right-wing authoritarian attitudes (Altemeyer, 1988; Duckitt & Fisher, 2003). And when people are experimentally induced to agree with statements suggesting that social conditions are declining, they subsequently report more conservative political attitudes (Eibach & Libby, 2009).

To the extent that the appeal of right-wing views relies on perceptions of decline, and perceptions of decline are exaggerated due to the mechanism we explore in this article, drawing attention to relevant self-changes may reduce the persuasive appeal of right-wing arguments. Indeed, participants who are induced to consider changes in their own moral standards are less likely to conclude that the younger generation's morals have

declined, and consequently they judge right-wing arguments about moral decline to be less persuasive (Eibach & Libby, 2009). More generally, awareness of one's susceptibility to mistaking self-change for external change may encourage people to be more skeptical of their own perceptions of decline, and thus equip them to more critically evaluate the claims of social movements that play upon popular anxieties about societal decline.

Conclusion

The present studies demonstrate that the tendency to mistake change in the self for change in the world can be a source of exaggerated perceptions of social decline because common changes that people experience over the lifespan sensitize them to negative information about the world. People experience nostalgia for the good old days as a longing for a superior past world that has somehow slipped away. However, when people experience nostalgia they may not realize that they are actually longing for a past self: an unencumbered self who didn't have to worry about protecting children or balancing a checkbook, a more adventurous self who readily sought out new opportunities for personal growth, a more vigorous self who was undismayed by physical challenges, and a less cynical self who was not yet aware of the darker truths of human nature. The loss is real, and it is often deeply felt even though people may be mistaken about its source. The optimistic message of this research is that conditions may rarely be deteriorating as much as they appear to be. When we catch ourselves jumping to a conclusion that the world is "going to hell in a handbasket" we might benefit by stepping back to consider that what appears to be a change in the world may actually be a change within ourselves.

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