Review of General Psychology
2010, Vol. 14, No. 4, 340–353

1089-2680/10/$12.00 DOI: 10.1037/a0021288

Information Avoidance: Who, What, When, and Why

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Although acquiring information can provide numerous benefits, people often opt to remain ignorant. We define information avoidance as any behavior designed to prevent or delay the acquisition of available but potentially unwanted information. We review the various literatures that examine information avoidance and provide a unique framework to integrate the contributions of these disparate areas of research. We first define information avoidance and distinguish it from related phenomena. We then discuss the motivations that prompt information avoidance and the factors that moderate the likelihood of avoidance. Finally, we discuss individual differences that predict preferences for information avoidance. We conclude by evaluating the current state of research on information avoidance and discussing directions for future research.

Keywords: information avoidance, decision-making, information seeking

Almost four centuries have passed since Francis Bacon famously argued that "knowledge is power," yet the statement remains as true today as it was in the 1600s. Moreover, Francis Bacon arguably did not go far enough in his assertion; power is just one reward of knowledge. Greater knowledge can also translate into wealth, enlightenment, comfort, and even survival. For example, social scientists have long noted the link between education and income. People with advanced degrees earn far more on average than people without such degrees (Day & Newburger, 2002; Pfeffer, 1977; Ronan & Organt, 1973). In addition, people sometimes pursue knowledge for knowledge's sake in search of enlightenment and to quench curiosity (Loewenstein, 1994). Knowledge can also be a precursor to comfort by helping people prepare for future circumstances. Knowing the weather leads people to wisely choose a warm sweater on a cold morning or a pair of sunglasses when it is sunny. Finally, knowledge is necessary for survival. Without knowledge of how to make fire, build shelter, farm, hunt, and distinguish edible foods from poisonous ones, our ancestors would not have survived (Baumeister, 2005).

As valuable and important as knowledge is, people do not always seek it and sometimes appear to take great pains to avoid it. There are countless situations in which people prefer ignorance over knowledge. Thus, in contrast to the maxim that knowledge is power is the equally enticing maxim that "ignorance is bliss." Examples can range from the mundane to the extraordinary. For example, people often do not want to learn that someone else got a better deal on a recent, expensive purchase (Vohs, Baumeister, & Chin, 2006), or that they gained weight after the holiday season, or that their sports hero used steroids. Of importance, health researchers have documented a consistent tendency for people to avoid information about their HIV status. For example, anywhere from 12% to 55% of people who undergo testing for HIV fail to return to learn whether they were infected (Centers for Disease Control & Prevention, 1997; Hightow et al., 2003; Molitor, Bell, & Truax, 1999; Rugg, Higgins, & Schnell, 1989; Tao, Branson, Kassler, & Cohen, 1999; Valdiserri et al., 1993). Likewise, a large percentage of people opt not to learn their genetic risk for colon cancer and breast cancer when provided an opportunity (Keogh et al., 2004; Lerman et al., 1996; Ropka, Wenzel, Phillips, Siadaty, & Philbrick, 2006).

In this article, we examine the *who*, *what*, *when*, and *why* of information avoidance, and Figure 1 depicts a broad framework for our review. We begin with the *what* question by defining information avoidance and providing a brief overview of the major literatures that address the phenomenon. Next we explore the w*hy* question, discussing the motivations that lead to information avoidance. We then move to the w*hen* question by summarizing the conditions under which information avoidance is most likely to occur. Finally, we address the *who* question by briefly reviewing several literatures that point to individual differences in the tendency to avoid information. We conclude with a discussion of how our approach can instigate new and productive lines of research.

We have taken this particular approach for several reasons. First, although researchers in medicine, communication, organizational behavior, and psychology have studied aspects of information avoidance, their lines of research are quite disconnected. As a result, it is unclear what research efforts in these different disciplines share in common and how they differ. More important, there exists no systematic review of what is known about information avoidance from these divergent literatures. Our review reveals that many researchers are examining the topic of information avoidance, albeit haphazardly, but none appear to communicate with each other or even appear aware that others exist. Not surprisingly given these circumstances, the current state of research in the field is disjointed, unsystematic, and disorganized.

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We thank Mark Leary, Barry Schlenker, Kathleen Vohs, and several anonymous reviewers for helpful comments on earlier drafts of this article.

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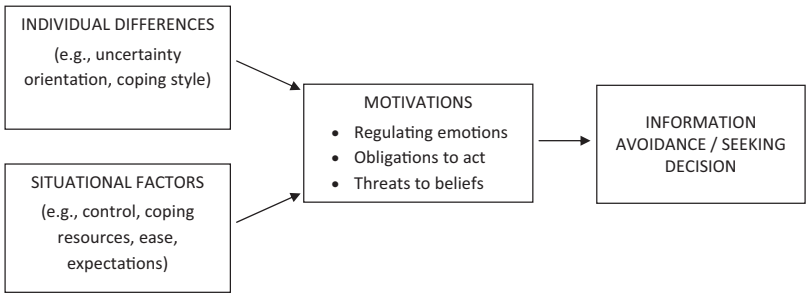

Figure 1. A framework for understanding information avoidance decisions.

Our article attempts to provide organization to a previously disorganized literature and to offer a review of what has been done in this area and what gaps remain. To this end, we present an organization of the research that casts light on both the common themes and unique contributions of a number of disparate literatures that speak to the motivational, situational, and dispositional influences on information avoidance. Furthermore, our examination of these literatures revealed that systematic review would be most appropriate in light of the current state of research on information avoidance. The widely varying approaches to the topic render a meta-analysis unfeasible, and the many gaps in our current knowledge about information avoidance render a formal theoretical model premature. In fact, the disconnected nature of investigations into the phenomenon of information avoidance prompt hesitation in claiming that our review is exhaustive, but we attempted to gather and discuss as much relevant literature as possible. Thus, the goals of our review are to organize the literature on information avoidance, to reveal aspects of information that are better versus less understood, and to suggest directions for future research and thus promote a more cohesive research effort as we move forward.

What Is Information Avoidance?

We define information avoidance as any behavior intended to prevent or delay the acquisition of available but potentially unwanted information. Information avoidance can entail asking someone not to reveal information, physically leaving a situation to avoid learning information, or simply failing to take the necessary steps to reveal the content of information. That is, information avoidance can be active (e.g., by asking someone not to reveal information) or passive (e.g., by failing to ask someone a question that would reveal the information). Furthermore, information avoidance is not limited to information about the self. For example, over half of participants in one study reported that they would not want to know if their partner or spouse had a genetic vulnerability (Yaniv, Benador, & Sagi, 2004). In addition, a study of spouses of men with prostate cancer revealed evidence that spouses coped by avoiding information about prostate cancer (Feltwell & Rees, 2004). To be sure, the avoided information has implications for the self, but the character most central to the information may be someone else. Finally, information avoidance can be temporary or permanent. People may avoid information with the intention of learning the information later, or they may decide to avoid the information altogether.

Given the ubiquity and potential consequences of information avoidance, it is not surprising that researchers in several fields have delved into the topic. The primary work on information avoidance in psychology is the research on selective exposure, which finds that people are sometimes particular about the information they seek, especially when evaluating their attitudes, judgments, and decisions (see Smith, Fabrigar, & Norris, 2008 for a review). Research on selective exposure primarily is grounded in dissonance theory and proposes that people typically avoid information that challenges their beliefs because such information creates cognitive dissonance (Festinger, 1954; Hart, Albarracín, Eagly, Brechan, Lindberg, & Merrill, 2009; Smith et al., 2008). The research on selective exposure reveals a pervasive (albeit not universal) tendency for people to seek information that is consistent with their beliefs, attitudes, and decisions, and to steer away from inconsistent information. For example, following a choice between two options, studies find that research participants sought both positive and negative information about the chosen alternative, but only negative information about the nonchosen alternative (Mills, Aronson, & Robinson, 1959).

Although our review will draw from the selective exposure literature where relevant, this literature, as well as a related literature on preferences for positive versus negative feedback (e.g., Trope, Garvey, & Bolger, 2003; Trope & Neter, 1994), addresses information with known content. That is, selective exposure studies typically examine whether people prefer information known to be consistent or inconsistent with their attitudes, beliefs, or decisions (Hart et al., 2009), and feedback preference studies examine whether people prefer information known to diagnose either their strengths or weaknesses. This type of information avoidance, in which the content is known, is common and reflects a rich and productive research tradition. However, we are most interested in understanding what drives people to avoid information under conditions of uncertainty or ignorance about the content of that information. People frequently face the choice between learning information and remaining ignorant, and these choices often have critical implications for health, relationships, careers, and well-being.

Although there are important similarities between selective exposure and information avoidance (i.e., both involve decisions about information exposure, and both can serve a self-protective function), reviews and meta-analyses of selective exposure leave out the vast majority of research on the phenomenon we define as information avoidance. For example, a recent meta-analysis of almost three hundred selective exposure studies explicitly disqual-

ified studies that did not present a choice between "consonant" and "dissonant" information (Hart et al., 2009). This selection criterion leaves out numerous studies that examine decisions about a single, uncertain piece of information, including decisions to seek or avoid information about health risks, medical diagnoses, genetic markers, and so forth. Thus, our review integrates evidence from selective exposure studies where appropriate but focuses on decisions about information with unknown content, a topic that has not yet been the subject of review. Of note, we applied the same approach to several related literatures, namely the literatures on biased information seeking (Jonas, Schulz-Hardt, Fischer, & Frey, 2006), stereotype confirmation and disconfirmation (Johnston, 1996; Johnston & Macrae, 1994; Wyer, 2004), and information preferences in close relationships (Afifi, Dillow, & Morse, 2004; Ickes, Dugosh, Simpson, & Wilson, 2003).

In addition to research on selective exposure, researchers in communication and information sciences have developed a variety of theoretical models to describe how people deal with information and manage uncertainty (e.g., Afifi & Weiner, 2004; Babrow, 2001; Berger & Calabrese, 1975; Brashers, 2001; Johnson, 1997; Wilson, 1999a). These models examine how and when people decide to seek information following awareness of an area of ignorance or uncertainty. Although these models differ somewhat in the moderators and processes they describe, they each provide insight into when and why people seek information versus choose to remain ignorant. For example, Afifi and Weiner's (2004) theory of motivated information management focuses on interpersonal factors in information seeking and delineates different types of efficacy that contribute to the decision to seek information. As another illustration, Babrow's (2001) problematic integration theory addresses the problems that arise when the information people expect to gain from a search diverges from the information they wish to gain. These models focus nearly all their effort toward understanding when and why people *seek* information, and we will draw from this research to the extent it speaks to information avoidance as well.

Finally, a growing number of studies relevant to information avoidance have appeared in medical journals, particularly with regard to genetic testing. These studies have explored factors predicting the decision to undergo genetic or other medical tests predictive of various diseases such as breast cancer, Huntington's disease, or Alzheimer's disease (e.g., Cutler & Hodgson, 2003; Lerman et al., 1999; Ropka et al., 2006; van der Steenstraten et al., 1994). Of course, different motivations might predict avoidance of different types of medical information, such as the results of screening tests for health risk information, tests for predictive versus determinant genetic markers, and diagnostic tests, but all involve the avoidance of potentially unwanted information. Although the literature on genetic and diagnostic testing decisions currently lacks theoretical coherence, these studies are clearly relevant to our inquiry and are cited throughout our review.

It is important to note that not all forms of information seeking and avoidance are relevant to the goals of this article. By our definition, information avoidance is also distinct from knowledge dismissal. With knowledge dismissal, people reject information they have already encountered rather than avoid information (Jemmott, Ditto, & Croyle, 1986; Shepperd, 1993). Indeed, with knowledge dismissal people may actively pursue the information only to reject it later because they believe it to be inaccurate or threatening. Information avoidance is also distinct from inference avoidance. When engaging in inference avoidance, people comprehend available information yet fail to draw the appropriate interpretation from the information (Greenwald, 1997; Paulus & Seudfeld, 1988). In contrast, information avoidance involves failing to acquire the information altogether. Although knowledge dismissal and inference avoidance likely serve as alternatives to information avoidance when avoidance is not an option, our review targets the predictors of *decisions* about exposure to information, not reactions to information that cannot be avoided.

Finally, our definition of information avoidance involves avoiding potentially *unwanted* information, not necessarily *undesirable* information. Although people generally are motivated to avoid unpleasant information and seek pleasant information, in some instances they may opt to avoid information that has little or no potential to be negative. For example, people may choose to avoid learning the sex of a forthcoming child (Shipp et al., 2004), the outcome of a video-recorded sports event, what happens at the end of a much anticipated novel, or whether friends are planning a surprise party for them. In all these instances, the avoided information can be quite pleasurable. However, avoiding (at least temporarily) the information can serve to heighten the pleasure, whereas gaining the information prematurely can spoil it.

In summary, our review examines instances in which people have choice between avoiding and seeking information that is not yet known and potentially unwanted. It is not ignoring information out of a simple lack of interest in the information or a lack of time and energy required to obtain it. Information avoidance is also distinct from dismissing or failing to draw inferences from information already obtained. Although these forms of "avoidance" are certainly interesting and potentially important, they invoke a very different set of answers to the who, when, and why questions that are the goals of our review.

Why Do People Avoid Information?

In light of the myriad benefits of possessing information, why might people avoid information? Although information can bring wealth, power, enlightenment, comfort, and opportunity, information can also lead to unpleasant or undesired outcomes. We suggest three reasons why people may choose to avoid information: (a) the information may demand a change in beliefs, (b) the information may demand undesired action, and (c) the information itself or the decision to learn information may cause unpleasant emotions or diminish pleasant emotions (Figure 1). Of course, all three motivations are not at play in all instances of information avoidance. For example, a man who avoids information that might reveal something negative about a favorite politician is likely unconcerned with whether that information could demand undesired action. In contrast, a young woman who delays taking a pregnancy test is likely unconcerned with whether she may be forced to change a cherished belief. We suggest that these three motivations collectively capture the various reasons people avoid information, but each motivation is likely to be more important in some circumstances than others. Similarly, these three motivations can operate independently or in tandem. That is, people may avoid information for more than one reason in a given situation. We suspect that most cases of information avoidance are motivated in part by concerns about unpleasant emotions, even if people are

simultaneously concerned about a threat to cherished beliefs or undesired action.

Information May Demand a Change in Beliefs

Sometimes people avoid information because the information might force them to give up or adjust cherished beliefs. One purpose information serves is to provide evidence either in support of or in opposition to a belief, and people may be reluctant or unwilling to face the possibility of learning information that challenges an important belief. As demonstrated in myriad studies of selective exposure, people tend to seek information that confirms their attitudes, beliefs, and decisions, and avoid information that disconfirms their attitudes, beliefs, and decisions (see Smith et al., 2008, for a review; see also Kunda, 1990; Nickerson, 1998).

People might avoid information that challenges any of three types of beliefs: beliefs about the self, beliefs about other people, and beliefs about their world. Regarding beliefs about the self, people have two motivations that might be threatened by learning potentially unwanted information. First, people are motivated to establish and maintain positive self-views, such as the belief that they are kind, talented, likable, capable of good judgment, and so forth (Hart et al., 2009; Snyder, Stephan, & Rosenfield, 1976). Second, people are motivated to maintain consistency in their self-views. New information should line up with both positive and negative beliefs they have about themselves (de la Ronde & Swann, 1993). To the extent people anticipate that information might challenge either the positivity or consistency of their self-views, they are more likely to avoid the information.

In support of this possibility are several studies examining the extent to which women avoided learning how others rated their physical attractiveness. These studies manipulated the self-relevance of the attractiveness ratings by indicating that the raters were peers at the same university (i.e., who would provide highly relevant feedback about their attractive) or students at a different university (i.e., whose feedback would be less personally relevant). Consistent with predictions, more women opted to avoid learning their attractiveness ratings when the raters were peers at their own university, which would pose more of a threat to self-beliefs, than when the raters were at a different university (Malone, Shepperd, & Sweeny, 2010).

The same two motives (self-enhancement and consistency) likely factor in decisions to approach versus avoid information about other people. That is, people are likely motivated to maintain consistent beliefs about important others and inclined to avoid information that is inconsistent with existing beliefs about those others. For example, several studies find that people tend to avoid information that disconfirms their stereotypes about people from other racial and cultural groups (Johnston, 1996; Johnston & Macrae, 1994), but this tendency is reversed in people who are very low in prejudice (i.e., people who hold stereotype disconfirming beliefs; Wyer, 2004). People might also avoid information that implies something negative about their leaders or heroes. During the Watergate hearings of 1973, a study of Nixon supporters, McGovern supporters, and undecided voters found that Nixon supporters paid less attention to and were less knowledgeable about the hearings compared with McGovern supporters and undecided voters (Sweeney & Gruber, 1984). That is, Nixon supporters avoided information that might have revealed that their preferred political candidate participated in illegal or immoral activities.

Finally, regarding beliefs about the world, people tend to seek information consistent with their worldview and avoid information that might challenge their worldview. For our purposes, a worldview can be as complex as a religion or as simple as the belief that good things happen to good people (Lerner & Miller, 1978). To the extent that people endorse a particular worldview, they may be motivated to avoid information inconsistent with that worldview. For example, one study from the selective exposure literature found that people generally avoided information that challenged their worldview and were particularly inclined to do so when they were most motivated to defend their worldview (Jonas, Greenberg, & Frey, 2003).

Information May Demand Undesired Action

The second reason people may wish to avoid information is that the information might obligate action or behavior that they would rather not undertake. Put another way, information often serves the purpose of providing an update about the state of the world, the state of one's health, the state of one's life, and so forth, and this update might make the person feel obligated to take action. Not only is change or action difficult in its own right, the action prompted by learning information might lead to a multitude of negative outcomes. For example, learning that a toothache requires a root canal is not only a hassle, but also expensive and painful. To the extent that people anticipate that information will demand changes or action that might be difficult, inconvenient, demanding, expensive, or unpleasant, they may be motivated to avoid the information.

Several health studies provide evidence that people avoid information when they believe that the information may obligate them to engage in some undesired behavior. For example, a study of commercial sex workers and their clients in South Africa revealed that one reason given for not getting tested for AIDS was recognition that a positive test result would demand a change in behavior (Vargas, 2001). Likewise, research reveals that the primary reason women in Nigeria gave for delaying a visit to their physician about a suspicious lump in the breast was a concern that they may have to undergo a mastectomy (Ajekigbe, 1991).

People are also motivated to avoid information about relationship partners that might obligate unpleasant action. For example, one study of homosexual partners found that people who were highly interdependent with their partner but also uncertain of the relationship's stability were the most likely to avoid relationship threatening information (Simpson, Ickes, & Blackstone, 1995). These findings suggest that people who were most concerned about an obligation to undesired action (in this case, breaking up with a close relationship partner) were most likely to avoid potentially unwanted information.

Of course, people can always decide not to take action or not to make changes, even if the information they learn suggests that changes may be wise or beneficial. That having been said, avoiding information likewise avoids the potentially difficult decision of whether or not to take action. Moreover, people may feel accountable to take action or make changes when they learn information, even if the actions or changes are difficult or unpleasant. For example, a physician might require a follow-up appointment to

encourage a patient to make suggested health changes, or a professor might require a failing student to come in for tutoring. Under some circumstances people might feel that avoiding the information is the only way to avoid costly or unpleasant changes in their behavior.

Information May Cause Unpleasant Emotions or Diminish Pleasant Emotions

The third reason people might want to avoid information is because of the potential emotional consequences of the information or of the decision to learn information. Research suggests that people employ a variety of strategies to avoid or mitigate the experience of negative emotions (Carroll, Sweeny, & Shepperd, 2006; Gross, 1998; van Dijk, Zeelenberg, & van der Pligt, 2003) and to heighten or prolong positive emotions (Wilson, Centerbar, Kermer, & Gilbert, 2005), and we suggest that information avoidance may be yet another strategy to this end. In a study of gay and bisexual men given the opportunity to learn their HIV status, almost 80% of men who declined to learn their status reported concern over the psychological impact of a positive test result (Lyter, Valdiserri, Kingsley, Amoroso, & Rinaldo, 1987; see also Vargas, 2001; Zapka, Stoddard, Zorn, McCuster, & Mayer, 1991). That is, these men avoided information in an effort to avoid an unpleasant experience. Other studies find that concerns with experiencing unpleasant emotions account for information avoidance for a host of other medical conditions including Alzheimer's disease (Cutler & Hodgson, 2003), Huntington's disease (van der Steenstraten, Tibben, Roos, van de Kamp, & Niermeijer, 1994), breast and ovarian cancer (Thompson, Valdimarsdottir, Duteau-Buck, et al., 2002), as well as other cancers (Friis, Elverdam, & Schmidt, 2003; Leydon et al., 2000).

Outside of health, one study found that soccer fans in Belgium and in the Netherlands were less likely to visit team websites following a team loss than following a team victory (Boen, Vanbeselaere, & Feys, 2002). Obviously, visiting a team Web site is unlikely to obligate behavior. Nor is the visiting the website going to force a change in belief—participants most certainly already knew the outcome of the game. Most likely fans avoided the team websites after a team loss because reading about the loss would do little more than perpetuate the unhappiness associated with the team's poor performance.

Of course, in the case of potentially positive information, people may be more concerned with enhancing or prolonging positive emotions than with avoiding or mitigating negative emotions (Wilson et al., 2005). For example, one study of pregnant couples found that 42% of soon-to-be parents did not want to know the gender of their child before the birth, and of these couples 73% gave as their reason that they didn't want to ruin the surprise (Shipp et al., 2004). In fact, we suspect that avoiding positive information arises primarily (if not entirely) from the motivation to prolong or bolster positive emotions.

Regarding negative emotions, people may judge information to be potentially unwanted because of the information's potential to cause emotions such as sadness, disappointment, fear, anger, embarrassment, guilt, and shame. For example, avoiding information that might suggest or confirm a health problem circumvents the emotion of fear. Avoiding information about a relationship partner's indiscretions circumvents the emotions of anger and shame. Avoiding information that would reveal a personal failure circumvents the emotions of disappointment and embarrassment. Avoiding information about the suffering of others circumvents the emotions of anguish and guilt.

The emotions just described result from the information itself. It is noteworthy that people are also motivated to avoid regret over a poor decision, and we distinguish between the motivation to avoid *information* that might lead to negative emotions and the motivation to avoid a *decision* that might lead to the negative emotion of regret. Regret is a reflection of people's wish or desire to have made a choice different from the one they made (Zeelenberg & Pieters, 2007; Zeelenberg, van Dijk, Manstead, & van der Pligt, 1998). Regret is an aversive emotional experience, and people are motivated to minimize or avoid regret when possible by making decisions that they believe will be least "regrettable" (Connolly & Zeelenberg, 2002; van Dijk & Zeelenberg, 2007; Zeelenberg, 1999; Zeelenberg & Pieters, 2007). In fact, a growing number of studies find that people make decisions based in part on their expectations of regret in the contexts of exercise (Abraham & Sheeran, 2003), flu vaccination (Chapman & Coups, 2006), childhood vaccination (Wroe, Turner, & Salkovskis, 2004), and sexual behavior (Richard, de Vries, & van der Pligt, 1998).

It is likely that two types of anticipated regret play into decisions to avoid or seek information: anticipated regret over seeking the information and anticipated regret over avoiding the information. Regret theorists contend that people making decisions mentally compute the potential for regret for each of their options and then choose the option with the least potential for regret (Acker, 1997; Lee, 1971; Luce & Raiffa, 1957; Zeelenberg & Pieters, 2007). In the case of information avoidance, we suggest that people determine how likely they are to experience regret if they *learn* the information and then balance this judgment against the likelihood that they will experience regret if they *avoid* the information. In fact, several studies confirm that people who avoid information anticipate that they will experience greater regret over learning the information than they would if they avoided it (Melnyk & Shepperd, 2010; Sweeny & Malone, 2010).

Summary

In sum, people may be motivated to avoid information for three reasons: (1) the information might threaten cherished beliefs about the self, others, or the world, (2) the information might demand undesired change or action, and (3) the information or the decision to learn information might lead to unpleasant emotions. Although these concerns may not be equally important or equally relevant in all cases, people are more likely to avoid information to the extent that they anticipate these outcomes. Of course, it is noteworthy that the three motivations to avoid information that we discuss are not the sole motivations at play when people face available but potentially unwanted information. Instead, people almost certainly balance their desire to avoid information against the various motivations to learn information. People might be motivated to learn information for a number of reasons. They may be motivated to satisfy their curiosity simply for the sake of reducing uncertainty (Loewenstein, 1994). Similarly, people might hope to learn something that brings them happiness, relief, or pride, or that reduces negative feelings of worry or fear or provides a sense of closure to an uncertain situation (Meissen, Mastromauro, Kiely, McNamara,

& Myers, 1991). Consistent with this idea, evidence suggests that emotional reassurance (e.g., a desire to reduce worries about breast cancer) was strongly correlated with interest in undergoing genetic testing for breast cancer (Shiloh & Ilan, 2005). We restrict our focus to the reasons people avoid information, but we acknowledge that these considerations are balanced against the opposing motivation to learn information.

When Do People Avoid Information?

People are not equally likely to avoid information across all circumstances. Rather, there are situational factors that make information avoidance more or less likely to occur. Although this list may not prove to be exhaustive as research on information avoidance moves forward, we identify the following moderators of information avoidance: (a) control over of the consequences of information, (b) resources to cope with the information, (c) ease of obtaining or interpreting the information, and (d) expectations about the content of information. These moderators have received varying amounts of empirical attention, and some are more straightforward than others. Regarding the first three moderators, it is important to note that perceptions are more important than reality. Thus, *perceived* control, coping resources, and ease are more influential in the decision to avoid information than actual control, coping resources, and ease.

We begin with the moderators that are both well supported and straightforward in their prediction of information avoidance, then turn to the moderators that have received less attention. We include the latter group of moderators in the interest of thoroughness and to stimulate research that might clarify their precise role in information avoidance. As depicted in Figure 1, we suspect that the moderators described in this section influence the motivations to avoid or seek information, although the specific nature of these relationships has received little empirical attention.

Perceived Control

The first moderator of information avoidance is people's perception of their control over the consequences of the information. The less control people perceive, the more inclined they are to avoid the information. Conversely, if people believe that the information will provide an opportunity to improve the situation, they are less inclined to avoid the information. Several studies illustrate the important role of perceived control in avoiding versus seeking information. For instance, participants in one study reported that one of the most important reasons for wanting to know whether they will develop Alzheimer's disease is the control they will gain in terms of preparing for the future and identifying the best course of treatment (Cutler & Hodgson, 2003). Participants in another study learned about a genetic test for a serious disease that manifests in adulthood and produces a painful death within 10–20 years of diagnosis. Eighty-seven percent of participants reported strong interest in taking the genetic test if the disease was treatable, yet only 42% reported interest if the disease was untreatable (Yaniv et al., 2004; see also Shiloh, Ben-Sinai, & Keinan, 1999). Similarly, participants in another study who were told about a severe disease were more interested in being tested for the disease when it was described as treatable than when it was described as untreatable (Dawson, Savitsky, & Dunning, 2006).

In addition, studies from the selective exposure literature reveal that people are more likely to avoid information that suggests they recently made a poor judgment if they believe they cannot change or reverse their prior decision than if they believe they can change it (Frey, 1981; Frey & Rosch, 1984). Likewise, women were more likely to choose to learn their breast cancer risk after reading about ways in which women can reduce their breast cancer risk than after reading about the uncontrollable aspects of breast cancer risk (Melnyk & Shepperd, 2010). Finally, a study of feedback preferences found that people were more open to potentially negative feedback about their social abilities when they perceived these abilities to be controllable (Trope et al., 2003). In sum, numerous studies confirm that people are less likely to avoid information when they perceive that they can control information's potential consequences.

Coping Resources

The second moderator of information avoidance is the extent to which people believe they can cope with the information. When contemplating potentially unwanted information, people may ask themselves, "Can I handle this information right now?" For example, one study found that women who avoided information about their breast cancer risk reported less ability to cope with the information than did women who sought the risk information (Melnyk & Shepperd, 2010). Further evidence for the role of coping resources comes from a study of dental patients. Dental patients who believed they could handle dental pain (i.e., a potential consequence of a dental diagnosis) were less likely to avoid dental exams than were patients who believed they could not handle dental pain (Klepac, Dowling, & Hauge, 1982). Likewise, a primary reason given for not wanting to be tested for Huntington's disease was a concern that one would be unable to cope with the bad news of positive test results (van der Steenstraten et al., 1994).

Coping resources are not one-dimensional. People can draw from multiple sources of strength when facing unpleasant information, and likewise they may have multiple sources of weakness. One resource that can influence coping ability is social support (Carver, Scheier, & Weintraub, 1989). For example, a woman awaiting the results of a breast biopsy might consider whether she has friends and family who will help her through possibly learning that she has cancer before returning to the physician's office for the biopsy results. In fact, studies find that receiving helpful emotional support is consistently related to positive health outcomes in breast cancer patients (Arora, Finney Rutten, Gustafson, Moser, & Hawkins, 2007), which might imply that perceptions of social support can facilitate coping with unwanted information (e.g., that one has breast cancer).

Another resource that influences coping ability is stability in other life domains. People may be better prepared to cope with unwanted information in one domain when other areas of their lives are going well. Research suggests that the presence of multiple life stressors, even positive stressors such as marriage, having a child, and so forth, can lead to health problems such as depression (Fountoulakis, Iacovides, Kaprinis, & Kaprinis, 2006), which may then make it difficult to cope with new unwanted information. Similarly, research on ego depletion suggests that self-control is a limited resource, such that dealing with one challenging situa-

tion makes it more difficult to successfully respond to another (Muraven & Baumeister, 2000). On the other hand, people who have many domains in their lives may be better prepared to cope with threatening information than people with few domains. Research on self-complexity finds that people who report a greater number of self-aspects (e.g., social roles, activities, goals, etc.) are less likely to experience adverse outcomes from life stress (Linville, 1987). Presumably, stress in one domain causes fewer problems overall when people perceive success in many other life domains, but can cause many problems overall when people perceive success in few or no other life domains.

In sum, people with few coping resources should display greater avoidance of unwanted information than people with more coping resources. The absence of coping resources may arise from deficits in perceived social support, stress in other life domains, or a lack of self-complexity.

Ease of Obtaining and Interpreting Information

The third moderator of information avoidance is the ease with which people can obtain and interpret the information. This moderator includes perceptions about the availability and accessibility of information, as well as considerations about the likelihood that people will be able to interpret and understand the information if they learn it. Many communication models emphasize the role of information's availability in decisions to seek or avoid information. For instance, Johnson's comprehensive model of information seeking includes an evaluation of whether the information is easily accessible and suggests that people are more likely to avoid information if it is difficult to obtain (Johnson, 1997). In addition, if people perceive that the information comes from a source they cannot trust or if the information is too difficult for them to interpret, they are likely to forego obtaining it (Afifi & Weiner, 2004, 2006; Johnson, 1997; Wilson, 1999b). For example, one study found that people were less interested in information about their romantic partner's sexual health to the extent that they felt their partner would be unable to provide accurate, complete information (Afifi & Weiner, 2006). Finally, the theory of motivated information management suggests that people are less likely to seek information if they feel that are unable to properly interpret the information (Afifi & Weiner, 2004).

Thus, we suggest that people are more likely to avoid information when they expect that the information will be difficult to obtain, or to interpret once they obtain it. Of course, not all instances in which people avoid the hassle of acquiring or interpreting information reflect information avoidance. When information is difficult to obtain people may view the information as not worth their effort. In such instances, people are not avoiding information; rather they are just choosing not to seek it. On the other hand, we suspect that people often use barriers to attaining information as an excuse to avoid information they do not wish to learn. For example, a woman who claims that she cannot find the time to get a suspicious mole looked at may in fact be avoiding a potentially scary diagnosis.

Expectations

The final and perhaps most obvious moderator of information avoidance is people's expectations about the content of information. When considering whether to avoid unknown information, people almost certainly consider the likelihood that the information reveals something negative versus positive. In essence, people make a risk judgment regarding the likely content of the information. For instance, people deciding whether to learn the results of a recent sporting event may consider the likelihood that they will have an unpleasant reaction to the information, or a less pleasant reaction than they would by waiting to watch a replay of the event. Although it seems obvious that expectations about the content of information should predict information avoidance, how expectations influence decisions to avoid or seek information is less clear. As one might imagine, people are often motivated to seek information when they believe there is a high likelihood that the information will be positive. For example, people are more inclined to seek feedback about a relationship they are in if they anticipate the feedback will be positive (Afifi & Lucas, 2006) and are more likely to actively avoid relationship information if they anticipate it will be negative or unpleasant (Afifi et al., 2004).

However, people sometimes seek information precisely when they think there is a high likelihood that it will be bad. For example, several studies find that women who reported feeling at high risk for breast cancer were also more likely to have regular mammograms (Aiken, West, Woodward, & Reno, 1994; McCaul, Branstetter, Schroeder, & Glasgow, 1996), and studies of genetic testing decisions find that high perceived risk is one of the most consistent predictors of the decision to undergo testing (Bosompra et al., 2000; Croyle & Lerman, 1993; Glanz, Grove, Lerman, Gotay, & Le Marchand, 1999; Gooding, Organista, Burack, & Biesecker, 2006; Graham et al., 1998; Lerman, Croyle, Tercyak, & Hamann, 2002; Meiser, 2005; Yanushka Bunn, Bosompra, Ashikaga, Flynn, & Worden, 2002). In addition, a recent meta-analysis of the selective exposure literature concluded that people seek information that they expect to be both consistent and inconsistent with their attitudes, beliefs, and decisions, depending on the circumstances (Hart et al., 2009). For example, people are more willing to learn information inconsistent with their attitudes, beliefs, and decisions when the inconsistent information is relevant to accomplishing a currently held goal (Hart et al., 2009). Of course, in selective exposure studies participants have knowledge of the content of information (or at least the valence), so their expectations are actually near certainties. Nonetheless, these findings combined with findings for information with uncertain content suggest that people consider their expectations about the content of information when they face potentially unwanted information, but the role of expectations is complex and may interact with other considerations. For example, people who feel unable to cope with bad news may be more likely to avoid information if they believe it will be negative. Similarly, people may be more likely to avoid information they believe to be negative when the outcome linked to the information is also uncontrollable.

In sum, we propose four moderators of information avoidance that vary in their degree of empirical attention. The literatures on medical avoidance, selective exposure, and communication strongly suggest that people are more likely to avoid information when the consequences of information are uncontrollable, when they feel unable to cope with the information, and when the information is difficult to obtain or interpret. However, the literature is less clear in regards to the relationship between expectations

and information avoidance. Sometimes people avoid information they expect might be bad, but other times they seek it.

Who Engages in Information Avoidance?

At one level, the answer to the question of who engages in information avoidance is "everyone." It is difficult to imagine a person who has not stopped in the middle of reading a tragic news item, chosen not to inquire of a spouse or child, or avoided health information with the thought, "I just don't want to know." However, certain people are more likely than others to make this choice across situations, and this section identifies two individual difference variables that predict a general tendency toward information avoidance: coping style and uncertainty orientation. As Figure 1 depicts, we suspect that coping styles and uncertainty orientation influence avoidance decisions by increasing or decreasing the three motivations described earlier.

Coping Style

Researchers measure coping styles in a variety of ways, but the most relevant coping styles for our purposes are the information-seeking styles of monitoring versus blunting. Health researchers have found that high "monitors" and low "blunters" prefer more information in the face of a threat. In contrast, high blunters and low monitors prefer less information in the face of threat (Miller, 1987, 1995; Miller & Mangan, 1983). For example, one study found that low monitors and high blunters were more likely to avoid information that indicated how well they performed on a test of intelligence, and a related study found that these same people avoided information about an upcoming electric shock (Miller, 1987). Similarly, research on genetic testing found that low monitors were less interested in a hypothetical genetic test than high monitors (Shiloh et al., 1999). Other studies find that low monitors/high blunters are less likely to undergo regular Pap tests and breast self-examinations (Steptoe & O'Sullivan, 1986) and less likely to undergo chorionic villus sampling for prenatal diagnosis (a more dangerous but earlier procedure than amniocentesis; van Zuuren, 1993).

Uncertainty Orientation

Sorrentino and Short (1986) describe people along a continuum of uncertainty orientation. Although the labels they use to describe the ends of the continuum are counterintuitive, they find that uncertainty-oriented people prefer situations that provide new information about themselves or the environment that have the potential to reduce some uncertainty. In contrast, certainty-oriented people tend to avoid situations that provide new information, even if this information has the potential to reduce uncertainty (Sorrentino & Hewitt, 1984; Sorrentino, Hewitt, & Raso-Knott, 1992). In one study, certainty-oriented participants were more likely than uncertainty-oriented participants to avoid undergoing a diagnostic test for a serious disease (Brouwers & Sorrentino, 1993). In another study, certainty-oriented people were more likely than uncertainty-oriented people to avoid information that would be most diagnostic of their conceptual ability (Sorrentino & Hewitt, 1984). Thus, uncertainty orientation may play a role in avoidance behavior, with certainty-oriented individuals engaging in greater avoidance than uncertainty-oriented individuals.

Other Potential Individual Difference Variables

It seems quite likely that myriad other personality traits can influence decisions to seek or avoid information. In fact, some individual differences map on to the situational moderators we described earlier. For example, we noted earlier that people are more likely to avoid unwanted information to the extent that they lack resources to cope with the information. Presumably, any individual difference variable that reflects some form of coping resource should distinguish between people who seek versus avoid information. For example, people who are dysphoric or depressed or have low self-esteem may display greater information avoidance because they feel that they lack the ego resources to cope should the information be bad (Lerman et al., 1999; Northcraft & Ashford, 1990). Similarly, people who naturally have few coping resources (e.g., people with few friends or family they can turn to in times of need) may be more inclined to avoid potentially unwanted information than people who have ample coping resources.

We also noted earlier that people are more likely to avoid unwanted information to the extent that the consequences of the information are uncontrollable. Some people are more likely to feel that they can control the outcomes of information. People high in self-efficacy perceive themselves as capable of exercising control over events in their lives (Bandura, 1994), and this general sense of efficacy may reduce the likelihood of information avoidance. Likewise, dispositional optimism may tap a sense of personal control over one's outcomes, and thus people high in dispositional optimism might be less inclined to display information avoidance than people low in dispositional optimism.

There are also several individual difference constructs that are likely relevant to information decisions, but that have not been examined in that context. For example, people high in the need for closure experience greater discomfort over ambiguity than their low need for closure counterparts (Webster & Kruglanski, 1994), and thus may be less likely to avoid information that could reduce ambiguity. Although no research on need for closure specifically examines information avoidance, several studies demonstrate that people who are high in need for closure are more likely to pursue information prior to making a decision and less likely to pursue information after making a decision (Kruglanski, Peri, & Zakai, 1991; Kruglanski, Webster, & Klem, 1993; Van Hiel & Mervielde, 2002). These findings suggest that people high in need for closure might also avoid decision-relevant information once a decision is made. Similarly, people high in intolerance of uncertainty (IU) react more negatively to uncertain or ambiguous situations (Dugas, Gosselin, & Ladouceur, 2001), and one study found that people high in IU were more likely to seek information about their health in the face of uncertainty (Rosen & Knäuper, 2009). The obvious implication is that people high in IU would be less likely to avoid information, even when the information is threatening. Need for closure and intolerance of uncertainty may be merely two in a long list of individual differences that have the potential to predict information avoidance, but that have not been empirically examined in that context.

Evaluation of the Literature

Given the importance of the topic, it is no surprise that researchers from a number of disciplines have explored information avoidance. Yet researchers exploring the topic seem largely unaware of each other. Our paper is the first to provide a review and organization of the vast and somewhat disjointed research on the who, what, when, and why of information avoidance. Aside from reviewing and organizing the current state of knowledge on information avoidance, perhaps the most important contribution of this review is that it reveals gaps in the literature and directions for future research. We will turn next to future research directions, but first it seems that an evaluation of the current state of the literature is in order.

Although our review is intended to be thorough in its approach to the frequently occurring phenomenon of information avoidance, it is limited by the fact that researchers have devoted a great deal of effort examining certain aspects of the phenomenon and little or no effort examining other aspects. Beginning with the motivations for information avoidance (the "why" question), the selective exposure literature and related research on stereotype confirmation and disconfirmation provide vast and nuanced evidence for one motivation for information avoidance: to avoid threats to cherished beliefs, attitudes, and decisions. However, far less research has addressed the other motivations to avoid information. The medical literature and the literature on close relationships provide indirect evidence of the motivation to avoid an obligation toward undesired action, but no research directly addresses this motivation. As a result, little is known about the pervasiveness or moderators of the motivation to avoid information that might obligate people to take action. Similarly, the medical literature provides indirect evidence for emotion regulation as a motivation to avoid information, but it remains unclear exactly which emotions are most likely to prompt information avoidance, or how people balance the desire to pursue positive emotions against the desire to avoid negative emotions in the context of information decisions. Furthermore, because no research has attempted to examine the three motivations in a single study, there is little evidence to clarify which of motivations are most versus least common, when people are most likely to experience each motivation, or which elements of the situation predict the motivations that are most likely to come into play.

In addition, our list of situational moderators of information (the "when" question) is almost certainly incomplete, and the moderators we discussed have received uneven empirical attention across literatures. Perceptions of control are the best-supported of the moderators, with support from the literatures on health, selective exposure, and feedback preferences. In contrast, the medical literature provides the clearest evidence for the role of coping resources, and the communication literature most clearly speaks to the role of ease of attaining information in information avoidance decisions (e.g., Johnson, 1997). Support for the role of self-control resources largely comes from a single set of studies on various domains of information avoidance (Kruger & Evans, 2009), although research on the effect of cognitive load on selective exposure provides additional support (Fischer, Jonas, Frey, & Schulz-Hardt, 2005). Lastly, the literatures on health, selective exposure, and close relationships reveal a complicated relationship between expectations on information avoidance that certainly deserves further attention.

Finally, although researchers from a variety of fields have explored topics relevant to information avoidance, there is no overarching theoretical model for conceptualizing when and why people choose to avoid information. However, we find the absence of an overarching model neither surprising nor problematic. As a phenomenon, information avoidance is broad (covering both positive and negative events, short-term and long-term decisions, active and passive responses, conscious and nonconscious behavior, and information about self and others), complex (this paper alone identifies five moderators and numerous individual difference variables), and multidetermined (arising from at least three different motivations). In short, the topic of information avoidance is so diverse and multifaceted that it does not lend itself to a simple, one-size-fits-all theoretical framework. Indeed, information avoidance is similar to complex phenomena such as prejudice, altruism, self-concept, and many health outcomes, all of which defy simple, single theory explanations.

This is not to say that information avoidance is devoid of theory. Numerous theories from psychology and communication inform aspects of information avoidance. For example, self-verification strivings (de la Ronde & Swann, 1993) provide a theoretical basis for understanding why people may avoid information that challenges a cherished self-belief (see also self-enhancement theory and dissonance theory; Festinger, 1954; Taylor & Brown, 1988). Likewise, the theory of motivated information management (Afifi & Weiner, 2004) provides insights into how self-efficacy concerns influence information seeking, and problematic integration theory (Babrow, 2001) speaks to the problems that arise when the information people expect to gain from a search diverges from the information they wish to gain. We hope that our review of the literature will provide the impetus for more research in the area and further theoretical development.

In sum, our review points to vast inconsistencies in both the total attention paid to various aspects of information avoidance and the attention to each aspect across different and disconnected literatures. We argue that these inconsistencies are self-perpetuating, such that researchers in a given field would likely fail to consider predictors of information avoidance that are addressed outside their area of research. To illustrate, imagine that a health researcher, a selective exposure researcher, and a communication researcher each investigate women's avoidance of information about their risk for breast cancer. If each researcher examines only field-specific literature, they likely would examine certain aspects of information avoidance while excluding others. The health researcher might focus on women's concerns about required follow-up procedures should they learn their risk is high, or on their concerns about negative emotions that might result from learning unpleasant risk information. In contrast, the selective exposure researcher might consider only women's motivation to avoid a change in beliefs (e.g., that they are healthy, will have long lives, etc.). Finally, the communication researcher might look past motivations to examine the ease with which women can obtain such information, or perhaps their feelings of efficacy to cope with risk information. Although these different approaches can be complementary, they are only productive to the extent that researchers are aware of related findings in other fields. We hope that our review prompts a much greater awareness of what different fields have to offer toward understanding decisions to avoid potentially unwanted information.

Unanswered Questions

Given the inconsistencies in knowledge about information avoidance, the list of potentially productive research directions may be nearly infinite. Thus, the following discussion of unanswered questions represents merely a sample of future directions. First, we attempted to cover the moderators that have received noteworthy empirical attention, but other potential moderators deserve attention. For example, no research we know of examines the social aspects of information avoidance. Research on the motivations to seek genetic testing often mention family obligations as a key motivator (e.g., Etchegary, 2004; Warner et al., 2005), but there is little discussion of when and how social context is likely to influence decisions. Moreover, the presence of others may increase information avoidance to the extent that people are concerned that information may be embarrassing or reflect poorly on them, or if they feel that they will have to manage both their external and internal reactions to the information. Conversely, the presence of others may decrease information avoidance to the extent that people perceive those others as a source of social support or feel that they will appear childish or irresponsible to others should they opt to avoid the information. The social context is merely one of potentially many moderators of information avoidance that merit future study.

Another potential moderator that is worthy of empirical attention is the availability of self-control resources, particularly in relation to the amount of curiosity people feel regarding the information. Although this review is more concerned with people's motivations to avoid information than to seek it, curiosity affects the likelihood of motivated information avoidance by providing a countermotivation. We suggest that in some situations even people who are highly motivated to avoid unwanted information may nevertheless respond to the strong pull of curiosity. Information is not always immediately available, and some evidence suggests that people are less likely to succumb to sheer curiosity when the information is not available until sometime in the future. For example, participants in one study indicated that they would be less likely to take a magical pill that would reveal unpleasant information about a romantic partner (i.e., they would avoid the information) when they would learn the information 10 months in the future versus immediately (Kruger & Evans, 2009). This study further found that curiosity mediated the effect of timing on information avoidance, suggesting that information that was immediately available evoked greater curiosity than information that was not available until later, and the greater curiosity prompted people to seek information they might otherwise avoid (Kruger & Evans, 2009). This finding suggests that people might make different decisions in the face of potentially unwanted information depending on whether they possess sufficient self-control resources to overcome their curiosity. If the information is immediately available, curiosity can overwhelm any effort to avoid the information, but distant information seems not to prompt the same degree of overwhelming curiosity. Although these findings are suggestive of the role of self-control resources in information avoidance, further research should clarify the nature of the relationships between curiosity, self-control, and information avoidance.

Another issue that can be addressed by future research is the distinction between temporary and permanent avoidance. In some instances, people may permanently avoid unwanted information. Indeed, some situations naturally permit permanent information avoidance when the information is only available for a limited window of time. For example, a person may choose not to ask a dying spouse whether s/he was ever unfaithful. However, information avoidance need not be permanent. We suspect that people more commonly wish to delay information acquisition until a later time. For example, a woman awaiting the results of a medical test may merely postpone picking up the results for a few days or weeks rather than forego picking up the results altogether. Likewise, a person may wait until after lunch to return a dreaded call from the boss. In both cases, the person intends to learn the information eventually, but not immediately. Although our approach to information avoidance focuses on initial decisions about information (i.e., seek now or avoid now), the distinction between temporary and permanent information avoidance may reflect different antecedent conditions or underlying motivations.

Finally, future research can examine the distinction between active versus passive information avoidance. At the active end of the continuum, people may avoid unwanted information through verbal or physical acts: by looking in the other direction, by turning off the TV or radio, or by asking a person with unwanted information not to disclose it. At the passive end of the continuum, people may fail to exert the effort necessary to reveal information, thus avoiding the information through inaction. For example, people can fail to pick up their medical test results or decline testing altogether (Centers for Disease Control & Prevention, 1997; Molitor et al., 1999; Tao et al., 1999; Valdiserri et al., 1993), neglect to retrieve their final grade in a class, or refuse to expose themselves to unwanted views or opinions (Sweeney & Gruber, 1984). We have little reason to believe that the conclusions of our review should differ for passive versus active information avoidance, but the ease with which people can avoid information is worthy of further empirical attention.

Broader Considerations

We close by speculating on two final questions. First, how pervasive is information avoidance? Throughout this paper we have demonstrated the breadth of information avoidance by drawing examples from medicine, business, relationships, academics, and mundane daily activities. We believe that people avoid information about trivial issues such as whether they gained weight, the size of a credit card bill, and whether they paid too much for a purchase. But people also avoid information about more important issues such as their health, their job security, and the behavior of their elected officials. We suspect that everyone avoids information at some point, and perhaps with some frequency. People engage in information avoidance every time they delay reading an email that might bring bad news, choose not to step on a scale for fear of what it might reveal, or avoid asking a question because they fear the answer.

Second, when is information avoidance most likely to be harmful? One factor that might predict the effect of information avoidance is control over the information's consequences. Presumably, the greater the control, the less information avoidance is beneficial. For example, people who avoid a diagnosis of a treatable disease may face serious health consequences that they could otherwise have avoided. However, people who avoid learning the results of

a genetic test may face fewer consequences of their choice. Although even uncontrollable information might provide an opportunity to take action to mitigate certain consequences (e.g., by writing a will, telling loved ones, etc.), the consequences of avoiding information about an uncontrollable outcome may be less dire than the consequences of avoiding information about a controllable outcome. A second factor that might predict consequences of information avoidance is the duration of the avoidance. Information avoidance is often not harmful when temporary. For example, pausing for a few minutes to gather strength before reading an email that might contain bad news is unlikely to lead to negative consequences. However, never reading the email might lead to lost opportunities or escalating costs. Similarly, students may lose the chance to change a mistaken grade if they wait too long to find out about the problem, and many diseases are treatable only in their early stages. Although we do not advocate either information avoidance or information seeking across the board, we suspect that at times knowing less is better, and at other times knowing less can be quite hazardous.

Conclusion

Information avoidance is a paradoxical behavior among a species with complex brains capable of acquiring and handling massive amounts of information. To avoid information, from this perspective, is a perplexing and seemingly unnecessary choice. However, when one considers humans' unique ability to mentally time travel (Suddendorf & Cordalis, 2007; Wilson & Gilbert, 2005), and hence anticipate what the information may mean for the future, information avoidance becomes perfectly understandable. That said, the phenomenon of information avoidance as we define it is not well understood, and the time has come to study it in a theoretical and systematic way.

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Received July 13, 2010
Revision received August 23, 2010
Accepted August 23, 2010 ■