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# Biased Assimilation: Effects of Assumptions and Expectations on the Interpretation of New Evidence

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Abstract

People so readily generalize that they often 'know' in advance what they are going to like and what they are going to dislike. They develop assumptions and expectations, which in part determine their future evaluative responses. Biased assimilation occurs when perceptions of new evidence are interpreted in such a way as to be assimilated into preexisting assumptions and expectations. Because this bias may not be deliberate, people suspect the motives of others who do not share their evaluations, and the bias is difficult to overcome. Biased assimilation most likely occurs, however, because acting as though one's assumptions and expectations are correct is generally more adaptive than acting as though one's assumptions and expectations might be wrong. Therefore, overcoming a general tendency toward biased assimilation is not necessarily desirable.

5-year-old: ''What are we eating?''
Parent: ''We're having tofu. You'll like it.''
5-year-old: ''Toe food! Yuck!''
Parent: ''It's not *toe* food. It's tofu. It's health food.''
5-year-old: ''I don't like health food.''
Parent: (chewing and smiling): ''Just try a little. You'll see. It's delicious.''
5-year-old (spitting): ''Ugh. It tastes horrible. You don't really like it. You're just pretending to like it so I will eat it.''

This all-too-common dinner table conversation illustrates several general principles of evaluation. People so readily generalize that they often 'know' in advance what they are going to like and what they are going to dislike. They develop assumptions and expectations, which in part determine their future evaluative responses. These assumptions and expectations can bias perceptions of new evidence. Because the bias may not be deliberate, people suspect the motives of others who do not share their evaluations, and the bias is difficult to overcome. In the sections that follow, we review empirical evidence for these general principles of evaluation.

## Generalization

People readily generalize from one object to another, and it seems adaptive to do so. It would be a foolish child who was stung by one bee and yet insisted on minutely examining the markings of the next bee to find out if it was the same kind of animal. Once you have been burned by touching one fire, it is safer to assume that all fires will harm you than to try the experiment of putting your hand in different types of flames to see which ones burn and which ones do not. The relative safety of generalizing versus individuating may be one reason why people, even small children, carry the tendency to an extreme and are often 'guilty' of *over*-generalizing (Slobin, 1971).

We seem to over-generalize when thinking about other people as well, which may in part explain the prevalence of gender, racial, ethnic, occupational, and other stereotypes, many of which seem to be activated automatically on encountering members of the group in question (Fazio, Powell, & Herr, 1983). In one study, for instance, college students behaved more negatively toward a graduate assistant merely because they had previously been treated poorly by a different person who happened to wear her hair in the same style (Lewicki, 1985). If strangers can be lumped together on the basis of how they wear their hair, then how much easier must it be to generalize from one to other members of an outgroup and assume that they are all the same? (Judd & Park, 1988).

The 'halo effect' is a particularly robust form of over-generalization in which people readily generalize from one positive or negative characteristic of a person to the valence of other characteristics (Cooper, 1981). They tend to do so even when those other characteristics are either unknown, unlikely, or seemingly contradicted by objective evidence (Asch, 1946; Cooper, 1981; Newcomb, 1929; Thorndike, 1920; Wells, 1907). In the halo effect, one central characteristic tends to color assumptions about many other characteristics, creating an illusory correlation among the target person's attributes (Chapman & Chapman, 1969).

## Assumptions and Expectations

The tendency to over-generalize allows people to develop assumptions and expectations even for specific objects that they have never encountered before. On the basis of either direct or indirect experience (Fazio & Zanna, 1981), an individual might generalize from one instance of health food such as tofu to other exemplars like tempeh, from one attribute such as lack of texture to other characteristics like being slimy, from one emotion such as being afraid to other emotions like being disgusted, and from one action such as spitting to other actions like pushing away (Lord & Lepper, 1999). These assumptions and expectations, all of which can be positive or negative (Osgood, Suci, & Tannenbaum, 1957), can become associated with an entire category such as 'health food.' The mere sight or mention of the category can trigger an inter-related network of associated objects, attributes, emotions, goals, and tasks (Bassili & Brown, 2005; E. R. Smith, 1996).

The resulting assumptions and expectations exert powerful effects on how people anticipate the future and how they reconstruct the past (Hirt, 1990; Jost & Kruglanski, 2002; Thomas & Znaniecki, 1918). In one study, for instance, participants who had witnessed an interaction between a Black man and a White man later 'remembered' that the Black man held (and even used) a razor, when the razor had actually been in the White man's hand (Allport & Postman, 1947). People also reconstruct their own past actions in ways consistent with their current assumptions, even when those assumptions and expectations have changed (Conway & Ross, 1984; M. Ross, 1989).

Assumptions and expectations are effective tools for survival (Olson, Roese, & Zanna, 1996). They can vary in perceived likelihood, abstractness, accessibility, and their behavioral consequences, but in most situations, assumptions and expectations act as adaptive guides to coping with the world (Roese & Sherman, 2007). Even unrealistic assumptions and expectations of personal success, for instance, can promote commitment to a promising but difficult course of action and are likely to facilitate eventual success (Krizan & Windschitl, 2007; Lewin, Dembo, Festinger, & Sears, 1944). To say that people form assumptions and expectations is the same as saying that people are fairly adept at learning from experience (Roese & Sherman, 2007), so it is probably not coincidental that assumptions and expectations play such a large part in evaluative responses.

## Evaluative Responses

Evaluative responses are thoughts, feelings, and/or actions that are evaluative (positive or negative, favorable or unfavorable) in nature. When a 5-year-old *thinks* that health food is not likely to be appetizing, *feels* disgust at the mere sight or mention of health food, and *acts* to push health food away, these are all evaluative responses (Eagly & Chaiken, 1993; Lord & Lepper, 1999; Zanna & Rempel, 1988).

When people make an evaluative response, they arrive at that response by combining their assumptions and expectations with their perceptions of reality (Lord & Lepper, 1999). Sometimes they rely more on their assumptions and expectations, and sometimes they rely more on their perceptions of reality. The 5-year-old who thinks health food is yucky without ever tasting it is relying entirely on assumptions and expectations. The parent who tries to get the 5-year-old to try tofu is hoping that a taste of reality will override these negative assumptions and expectations.

Assumptions and expectations tend to take precedence when there is no actual object to perceive. Participants in psychology experiments, for instance, are often asked to rate their attitudes toward an object that is not physically present, but represented only by words on a piece of paper or on a computer screen. In such situations, respondents are forced to rely entirely on their assumptions and expectations to make an evaluative response (e.g., marking a specific point on a rating scale). Alternatively, perceptions of reality might take precedence when they are especially vivid and undeniable. Even a 5-year-old who had never seen chocolate before and thought it was 'health food' might eat more after trying one bite, if the taste was exquisite enough.

One interesting aspect of assumptions and expectations is that they are unlikely to be uniformly positive or negative (Lord, 2004). People gather, either from personal experience or vicariously, a wide range of assumptions and expectations for many objects. Some health foods are enjoyable and others are not. Health foods tend to have some desirable characteristics, but they can also have other characteristics that are undesirable. Health foods might make you happy at a time when you wanted to lose weight but might make you sad at a time when you were intent on celebrating.

Because assumptions and expectations have this 'mixed bag' quality, evaluative responses can differ from one time to the next, depending on the particular subset of assumptions and expectations that are activated at that point in time (Erber, Hodges, & Wilson, 1995; Lord, Ross, & Lepper, 1979; Potter, 1998; Schwarz, 1990; Schwarz & Bless, 1992; Schwarz & Bohner, 2001; Sia, Lord, Blessum, Thomas, & Lepper, 1999; Tourangeau & Rasinski, 1988; Wilson & Hodges, 1992; Wyer & Albarracín, 2005). Someone who likes tofu and does not like tempeh, for example, might rate 'health foods' as moderately positive today and yet rate 'health foods' as moderately negative a month from now, simply because different health foods came to mind at the two different times (Carlston & Smith, 1996; E. R. Smith & Zárate, 1990; Wilson & Hodges, 1992; Wyer, 2004).

The probability of naming the same example of 'vegetables' and other social and nonsocial categories 1 month apart is approximately 0.69 (Bellezza, 1984), which is similar to the test–retest reliability of self-report scales that measure favorability toward those categories (Sia, Lord, Blessum, Ratcliff, & Lepper, 1997). Evaluative responses that rely on assumptions and expectations are subject to 'context effects' that can push the response in either a positive or negative direction, depending on which examples and characteristics have been made momentarily salient (Schwarz, 2000). In one relevant study, participants reported more positive attitudes toward politicians after being subtly reminded, in an

'unrelated experiment,' of a specific politician they liked than of a specific politician they disliked (Sia, Lord, Blessum, Ratcliff, & Lepper, 1997). In a follow-up study, participants reported less stable attitudes across 5 weeks, and were more susceptible to a persuasive message intended to change their opinions, if they were reminded of different (and differently liked) specific politicians just prior to each week's attitude report (Lord, Paulson, Sia, Thomas, & Lepper, 2004; see also Bargh, Chaiken, Govender, & Pratto, 1992 and Jonas, Diehl, & Broemer, 1997).

Except on questionnaires and surveys, evaluative responses are likely to be informed by combining assumptions and expectations with perceptions of reality (Lord & Lepper, 1999). Evaluative responses that are based in whole or in part on perceptions of reality are not necessarily more reliable, however, than those that are based entirely on assumptions and expectations (Schwarz, 1990; Schwarz & Strack, 1991). Perceptions of reality are themselves often biased by assumptions and expectations (Roese & Sherman, 2007). Five-year-olds who 'know' they are not going to like the taste of a strange food before they taste it have an unnerving habit of finding the food 'yucky' even after they taste it.

## Biased Assimilation

Assumptions and expectations fill in the gaps when, as is often the case, people are missing important information about an object. They might never have tried a particular health food or never interacted with a member of a specific stereotyped group themselves, but their assumptions and expectations provide 'default values' (Ajzen, 1996; Bodenhausen, 1988; Higgins, Bargh, & Lombardi, 1985; Srull & Wyer, 1979; Wyer, Bodenhausen, & Gorman, 1985; Wyer & Srull, 1989). These default values include, but are not limited to, likely examples (e.g., tofu), characteristics (e.g., unappetizing), emotions (e.g., disgust), actions (e.g., avoiding), norms (e.g., my friends wouldn't eat that, and they wouldn't want me to eat it either), and effects (e.g., it will make me sick) (Lord & Lepper, 1999).[1]

A more interesting case arises, however, when perceivers have two types of information available to them: their assumptions and expectations about an object, and the actual object that is available for their inspection. It might at first seem logical that qualities of the real object would render the preexisting assumptions and expectations moot, but that is not the case. Instead assumptions and expectations can alter the very nature and meaning of how the new evidence (e.g., the taste of tofu) is perceived. The perceptual system relies on assumptions and expectations to make sense of an inherently ambiguous world (von Hippel, Sekaquaptewa, & Vargas, 1995; Medin & Ross, 1992). We see what we expect to see, and experience what we expect to experience (Bruner & Potter, 1964; Heider, 1958; Sagar & Schofield, 1980; Wyatt & Campbell, 1951).

Empirical examples abound. Fans of two competing teams can watch the same football game but differ dramatically in which team they 'saw' display despicable conduct (Hastorf & Cantril, 1954). Democratic and Republican partisans can watch the same presidential debate and yet each side will swear that their own favored candidate performed better than his or her rival (Munro et al., 2002). People who think that a child comes from a wealthy home can watch the same standardized test performance and yet perceive the child as scoring better than will people who think the child comes from a poorer economic background (Darley & Gross, 1983). Subjective assumptions and expectations often alter perceptions to a surprising extent (Duncan, 1976; Rosenhan, 1973).

In one of many relevant experiments, participants were selected because they were committed partisans on a social policy issue that they said was important to them (Lord,

Ross, & Lepper, 1979). Half of them favored capital punishment and believed that the death penalty deters homicide; the other half opposed capital punishment and believed that the death penalty models rather than deters homicide. Participants on both sides read two (fictitious) studies that were supposedly taken from published research. One study found that capital punishment increases homicide, and the other study found that capital punishment decreases homicide. When asked to evaluate how well done the two studies had been, partisans on both sides of the issue accepted the methodological rigor of whichever study had supported their own opinions, and yet found serious flaws in the methodology of whichever study's results contradicted their own opinions. They were so impressed by the methodological superiority of evidence on their own versus the other side, in fact, that the participants reported having adopted even more extreme opinions than they had held before the experiment began (see also Tesser, 1978).

Partisans in this capital punishment study did not differ in their evaluations of the fictitious studies when they were told only the results. They tended to accept those results at face value and let their opinions slide in the direction of the stated results, even when those results contradicted their initial assumptions and expectations. Differences in evaluation of the studies occurred only later, when they were provided with procedural details (Lord, Ross, & Lepper, 1979). Conceptually similar results were reported by Darley and Gross (1983), who gave college students differing initial assumptions about a young girl's likely competence. Participants did not differ in estimating the child's academic performance when they had only their assumptions to go by, but they differed dramatically in how well they thought she performed when they subsequently viewed her taking an academic achievement test. Merely putting more thought into an evaluative response is no guarantee that perceptions of reality will overcome initial assumptions and expectations. Sometimes greater thought not only fails to undo biased interpretation of new evidence, but it also strengthens the resulting evaluative response and its likelihood of influencing subsequent evaluative responses (Wegener, Clark, & Petty, 2006).

When people who hold preexisting assumptions and expectations erroneously perceive new information as confirming those assumptions and expectations, the effect has been called 'biased assimilation.' In the same way that immigrants can get assimilated into a new culture and lose their former identity in the process, so new evidence can get assimilated into preexisting assumptions and expectations and be perceived as supportive even when it is not (Fischhoff & Beyth-Marom, 1983; Mahoney, 1977). These effects are most likely to occur when the preexisting assumptions and expectations are easily activated (Houston & Fazio, 1989; Schuette & Fazio, 1995), strong (Chaiken & Yates, 1985), and embedded within a framework of related opinions and values (Pomerantz, Chaiken, & Tordesillas, 1995).[2]

Biased assimilation most likely occurs because it is an adaptive cognitive strategy, well suited to ensuring an organism's survival (Arkes, 1991). Having preexisting assumptions and expectations can be advantageous even when the assumptions and expectations are wrong (Wright & Murphy, 1984). Consider a man who encounters a snake. The snake may or may not be dangerous, but the man is most likely prepared to assume the worst (Koehler, 1991). The preexisting assumption, then, is that the snake is dangerous and to be avoided. A man who avoids all snakes, thus never testing the assumption that snakes are dangerous, has an adaptive advantage over a man who insists on testing the truth of his assumptions by picking up each and every snake that wanders into his path. A similar adaptive advantage favors people who assume that unfamiliar foods are not edible, or that strangers who do not look like them cannot be trusted.[3]

People are pragmatists. They are not as concerned with learning the truth about the 'real' world as they are with making decisions that will have the least harmful consequences if the decision proves wrong (Arkes, 1991; Schwarz, 1982). The man who avoids all snakes will never get to know that most snakes are not harmful. He is willing to forego that knowledge, though, because testing the idea that his assumption is wrong (by picking up snakes) could have far more serious negative consequences than simply acting as though his assumption is right (Friedrich, 1993). People frequently act as though their perceptions are accurate (Jost & Kruglanski, 2002), even in situations where accuracy would be difficult or impossible to verify (Jussim, 2005).

In many decisions that are important to survival in unforgiving environments, acting as though an assumption is right carries with it less serious consequences of being wrong than testing to see if the assumption might be false (Friedrich, 1993). Our cognitive processes, then, tend to favor accepting assumptions at face value (Klayman & Ha, 1987; Kruglanski, 1989). In such situations, and in making decisions in general, people tend to follow a positive test strategy by searching only for confirming and not for disconfirming instances (Klayman & Ha, 1987). They are thus predisposed to view new information as supporting their assumptions and expectations (I've avoided any and all snakes and have never been bitten by one) even when, in the strict logic of science (Popper, 1972), they have never put those assumptions and expectations to a proper test.

Our preexisting assumptions and expectations, in fact, have such an adaptive advantage that they resist disconfirmation even when they were originally based on mistaken information (L. Ross, Lepper, & Hubbard, 1975). Many studies of belief perseverance have shown that once a belief has been formed, people recruit other evidence, that would otherwise have remained inaccessible, to explain that belief (Anderson, Lepper, & Ross, 1980). Even when they later learn that an initial belief was based entirely on invalid data, those otherwise inaccessible explanations remain as salient reasons for holding the belief (L. Ross, Lepper, Strack, & Steinmetz, 1977; Sherman, Skov, Hervitz, & Stock, 1981). Explanations tend to have many of the same properties as other types of mental simulations (Koehler, 1991). Once people have explained or imagined something, it begins to seem more plausible and more probable (McGuire & McGuire, 1991).

Another reason why preexisting assumptions and expectations have such an advantage over the objective situation in determining our evaluative responses might be that when they are activated, assumptions and expectations are automatically treated as true (Clark & Chase, 1972; Gilbert, 1991). The philosopher Spinoza (1677/1982) disagreed with the prevailing wisdom that people first understand a statement and then decide whether it is true or false. He contended instead that people must first accept a statement as true in order to understand it. Deciding that the statement is false takes extra cognitive effort. Spinoza's contention has been supported in many studies (Gilbert, 1991), and provides a way to understand both biased assimilation and belief perseverance. Assumptions and expectations, which are so readily activated, carry with them a presumption of truth. In environments where rapid decisions are adaptive and taking the time to gather and mull over all the relevant data may prove dangerous, quick and dirty decision strategies, aimed at affirming the truth of initial assumptions and expectations, are warranted (Chaiken, 1987; Kruglanski & Webster, 1996; Simon, 1957).

Adaptive cognitive strategies, such as the positive test bias that contributes to biased assimilation of new evidence, can be so pervasive that they affect many types of judgments. People display biased assimilation when they accept at face value information indicating that they are in good health, but find serious flaws in information indicating that their health may be at risk (Campbell & Sedikides, 1999; Croyle, 1990; Croyle, Sun, &

Hart, 1997; Ditto & Lopez, 1992; Ditto, Scepansky, Munro, Apanovitch, & Lockhart, 1998; Jemmott, Ditto, & Croyle, 1986; Kunda, 1990; Liberman & Chaiken, 1992; Taylor & Brown, 1988). Gamblers display biased assimilation when they explain away their losses, but not their wins (Gibson, Sanbonmatsu, & Posavac, 1997; Gilovich, 1983; Gilovich & Douglas, 1986).

People who care deeply about issues of morality and ethics display biased assimilation when they view judicial and other decisions that support their own 'moral mandates' as fair, but then they notice numerous procedural flaws in decision outcomes that they consider to be ethically wrong (Epley & Caruso, 2004; Mullen & Skitka, 2006; Skitka & Houston, 2001; Skitka & Mullen, 2002; see also Boysen & Vogel, 2007). Similarly, people display biased assimilation when they let their preexisting opinions and ideologies affect their evaluations of political campaigns (Chang, 2003; Meffert, Chung, Joiner, Waks, & Garst, 2006), debates (Munro et al., 2002), trial evidence (Giner-Sorolla, Chaiken, & Lutz, 2002; V. L. Smith, 1991), criminal investigations (Ask & Granhag, 2007; Colwell, Miller, Miller, & Lyons, 2006), historical incidents (Hulsizer, Munro, Fagerlin, & Taylor, 2004), scientific information (Mahoney, 1977; Munro, Leary, & Lasane, 2004), and even consumer products (Chang, 2004; Chernev, 2001; Pham & Avnet, 2004; Traut-Mattausch, Schulz-Hardt, Greitemeyer, & Frey, 2004). Biased assimilation, then, can occur with any type of evaluative response.

## Suspect Motives

People honestly believe they are being fair and objective (Frantz, 2006), and yet without meaning to, they cannot help but regard evidence that supports their preexisting assumptions and expectations as more probative and reliable than evidence that calls those assumptions and expectations into question. Although some biases might be deliberate (e.g., deliberate attempts to enhance or protect the self-concept—see Kunda, 1990), assumptions and expectations can influence perceptions of reality without conscious awareness (Greenwald & Banaji, 1995). People might be aware of the decisions they reach and the conclusions they draw, but still remain unaware of the cognitive processes that led to those decisions and conclusions (Lieberman, Oschner, Gilbert, & Schacter, 2001; Nisbett & Wilson, 1977).

When people honestly believe that they are perceiving reality accurately, they are genuinely surprised to learn that other people have been exposed to the same evidence and yet arrived at conclusions different from their own (Pronin, Gilovich, & Ross, 2004). They 'know' that any truly unbiased assessment could not help but validate their own perceptions of reality (L. Ross & Ward, 1995), so they conclude quite reasonably that people who regard the evidence as neither supporting nor opposing them must be bending over backwards to favor a perspective opposite to their own. Thus, truly objective analysts and mediators who deliberately try to remain neutral, favoring neither one side nor the other, are regarded with suspicion by partisans on both sides.

In a relevant study, Vallone, Ross, & Lepper (1985) showed Israeli and Arab partisans actual news coverage of armed Arab-Israeli conflicts. The news reporters and commentators were presumably trying to do their jobs by presenting the conflicts in an evenhanded way. That objective, evenhanded approach, however, tended to anger partisans on both sides. Partisans on each side 'knew' from their own experience how righteous was their own cause, and how immoral and evil was the other side's cause. An evenhanded presentation seemed to both sides like an incredibly biased perspective that had deliberately

distorted the 'facts' by lying to third parties who had little information about the underlying issues (Innes & Zeitz, 1988).

The hostile media bias has been replicated in many settings and with many different types of disagreement (e.g., Christen, Kannaovakun, & Gunther, 2002; Dalton, Beck, & Huckfeldt, 1998; Matheson & Dursun, 2001; Thompson, 1995). People who see the world through the distorted lens of their own assumptions and expectations have repeatedly had those assumptions and expectations 'confirmed,' so they know with certainty that the bulk of the objective evidence supports their preexisting beliefs (Pronin, Gilovich, & Ross, 2004; Uhlmann & Cohen, 2007). In fact, partisans tend to view the opinions of people who disagree with them as more extreme than they actually are (Robinson, Keltner, Ward, & Ross, 1995). In the face of what seems to them to be overwhelming confirmation, both the other side's opinions and media neutrality seem objectively unwarranted. It seems reasonable instead to conclude that others who do not see the world as they do must of necessity have some basic intellectual or moral defect (Ichheiser, 1949). The hostile media bias is known to occur more readily, in fact, for partisans who identify more strongly with their own side in a conflict (Matheson & Dursun, 2001).

## Attempts to Overcome Bias

If people can be so completely unaware of their own biases that they suspect the motives of neutral parties, then it is not surprising that attempts to overcome biased assimilation have met with considerable difficulty. During the debriefing for Lord, Ross, & Lepper (1979) experiment on biased assimilation and the death penalty, for instance, many participants told the experimenter that they feared they might be biased in their evaluations of studies that contradicted their opinions, so they took extra care to be completely fair and unbiased. They claimed to have bent over backwards to give the contradictory study every possible benefit of doubt, and yet there was no way to overlook that study's glaring flaws. Several participants volunteered that they never realized before just how weak the evidence was that people on the other side were relying on for their opinions.

These comments led the researchers to suspect that merely exhorting participants to be fair and unbiased might have little or no effect on the tendency toward biased assimilation of new evidence. When people are following the wrong strategy and would not spontaneously consider for themselves any other strategy, getting them to try harder will result in even greater application of the strategy that led to biased assimilation in the first place. To undo biased assimilation, it seemed necessary to provide an alternative strategy that might lead to different conclusions.

Lord, Lepper, & Preston (1984), therefore, replicated the original death penalty biased assimilation experiment (Lord, Ross, & Lepper, 1979), but added two conditions. In one of those added conditions, they urged participants to consider all the evidence in an objective and impartial manner, and to cast themselves in the role of a judge or juror when reading the two death penalty studies. As predicted, these heavy-handed instructions did nothing to alter biased assimilation. If anything, participants in that condition were even more likely to evaluate the study that had produced contradictory results more negatively than the study that had produced supportive results. In the third experimental condition, however, the researchers asked participants, as they were reading the studies, to think about what their evaluation of each study's methodology would have been had they known in advance that the study had produced outcomes directly opposite to its

actual results. As predicted, this *consider the opposite* technique eliminated both biased evaluations and attitude polarization (see also Frantz & Janoff-Bulman, 2000).

Further research has shown that it is not necessary to have participants consider evidence outcomes that are exactly opposite. To reduce biased assimilation, it seems sufficient merely to have participants entertain *any* alternative, different possibility—to break their cognitive sets (Koehler, 1991). When participants focus on another possibility, that alternative possibility or possibilities (Hirt & Markman, 1995) become the focal assumption(s). The usual, pragmatic, adaptive strategy of looking only for confirming evidence now favors the alternative possibility and not the initial assumption (Hoch, 1984; Koehler, 1991). Biased assimilation can be reduced, then, by directing people toward cognitive strategies that they would not likely have discovered or implemented on their own (Evans, 1989; McGuire, 1985).

Another way to reduce biased assimilation of new evidence involves self-affirmation. People do not display biased assimilation of new evidence when, before encountering that new evidence, they first get an opportunity to portray themselves in very positive ways (Cohen, Aronson, & Steele, 2000). When people get a chance to dwell on their own positive characteristics, they are presumably not as worried about making mistakes and about threats to their self-esteem (Steele, 1988). Recall that biased assimilation is thought to occur because people have an adaptive preference for acting as though their preexisting assumptions are correct instead of acting as though their preexisting assumptions are incorrect (Arkes, 1991; Friedrich, 1993; Nickerson, 1998). Individuals might differ in their preferred cognitive strategies (von Hippel, Lakin, & Shakarchi, 2005), but for adaptively important decisions, the consequences of acting in line with one's assumptions are usually far less serious than the consequences of acting contrary to one's assumptions just to find out whether they might be invalid (Arkes, 1991). Giving people an opportunity to portray themselves very positively, then, might provide a sense of safety that allows them to at least consider alternative possibilities (Cohen et al., 2007; see also Higgins, 1987; and Fischer, Greitemeyer, & Frey, 2008).[4]

An important benefit of identifying the cognitive strategies that people use when they engage in biased assimilation is that perceivers who are motivated to improve their own evaluative responses can be made aware of the strategies that are most effective. They can then use those effective strategies deliberately (Maio & Thomas, 2007). People who want to adopt more positive evaluative responses toward a stigmatized group, their jobs, their romantic partners, or even themselves could learn to use the epistemic and teleologic strategies that have been comprehensively reviewed by Maio & Thomas (2007). These effective strategies, which include (among others) biased interpretation, biased integration, biased attribution, and biased hypothesis testing, can be put to work in the service of self-persuasion (Maio & Thomas, 2007).

## Concluding Remarks

Generalizations lead to assumptions and expectations that bias interpretations of many types of new evidence. These assumptions and expectations can sometimes bring us to suspect the mental competence and/or motives of others who do not see the world as we see it. It might at first glance seem imperative for researchers to discover ways to free people from such bias errors. It is hoped that the present review suggests a different research motivation. Investigating ways to overcome biased assimilation of new evidence is necessary to understand the phenomenon, but it is not necessarily a desirable end in itself. Arguably, biased assimilation of new evidence involves cognitive strategies that are

inherently adaptive and pragmatic. ''If the errors that one is trying to avoid are, in fact, more costly than bias errors, such debiasing might not be desirable in all instances'' (Nickerson, 1998, p. 121). It might be desirable, for instance, to undo specific instances of biased assimilation that promote or escalate unnecessary conflict or encourage taking health risks, but the psychology of evaluation has yet to identify a 'magic bullet' that might affect such specific cases without dampening the more generally adaptive tendency to let initial assumptions and expectations inform the interpretation of immediate perceptions.

## Short Biography

Charles G. Lord is a Professor of Psychology and Director of Graduate Studies at Texas Christian University. He received his PhD from Stanford University in 1980 and served as an Assistant Professor of Psychology at Princeton University for 7 years, before moving to TCU in 1987. His current research interests include the effects of behavior on subsequent evaluative responses, attitude change strategies, perceptions of agency and memory for evaluative responses, and the role of the self in attitude processes.

Cheryl A. Taylor received her MS degree in Experimental Social Psychology at Texas Christian in May 2006 and is currently working on her PhD dissertation. Her interests include attitude embodiment effects, the effects of perceived agency on attitude change and strategies to facilitate attitude change.

## Endnotes

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[1] The assumptions and expectations activated by an attitude object can be many or few. In some cases, the object might trigger many assumptions and expectations about likely instances, characteristics, emotions, actions, contexts, goals, norms, and effects on the self. In other cases (e.g., knowing that you liked a movie when you hear its title but not being able to remember the plot or any of the actors), the only association that is activated might be the final result of a previous evaluative process (Lord & Lepper, 1999).

[2] Instances of biased assimilation might differ in whether the most strongly activated associations to the attitude object are cognitive (e.g., for evaluating studies of capital punishment), affective (e.g., for evaluating people who have a disease), behavioral (e.g., for evaluating exercise), or self-relevant (e.g., for evaluating one's own performance). Thus some theorists emphasize cognitive mediators of biased assimilation (e.g., Lord, Ross, & Lepper, 1979; Pomerantz, Chaiken, & Tordesillas, 1995), some emphasize affective mediators (e.g., Munro & Ditto, 1997), and some emphasize threats to the self-concept (e.g., Cohen, Aronson, & Steele, 2000). Further research is needed to match the type of activated associations with possibly different pathways to biased assimilation.

[3] Many of the decision-making strategies that human beings pursue in the modern world are thought to owe themselves to the survival and reproductive benefits they conferred to our hunter-gatherer ancestors (see e.g., Cosmides & Tooby, 1994; Haselton & Buss, 2000; Tomarken, Mineka, & Cook, 1989). It is an interesting empirical question, then, whether biased assimilation might be more adaptive in relatively threatening than safe environments, when people have a more prevention-oriented than promotion-oriented focus (Higgins, 1999), and for evaluating negative rather than positive attitude objects.

[4] Without knowing the results of Cohen, Aronson, & Steele (2000) studies, one might argue that self-affirmation should *increase* rather than decrease biased assimilation by making people more confident that they were 'right all along.' Cohen, Aronson, & Steele (2000) manipulations of self-affirmation (e.g., describing positive relationships with others, or receiving positive feedback on a test of social perceptiveness), however, seemed designed not to enhance confidence in participants' assumptions and expectations, but instead to provide reassurance in the face of potential threat.

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