

Attitudes and Attitude Change

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Annu. Rev. Psychol. 2018. 69:299–327

First published as a Review in Advance on August 25, 2017

The *Annual Review of Psychology* is online at psych.annualreviews.org

<https://doi.org/10.1146/annurev-psych-122216-011911>

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Keywords

attitude, persuasion, evaluative judgment, opinion, belief, goal, culture

Abstract

This review covers research on attitudes and attitude change published between 2010 and 2017. We characterize this period as one of significant progress toward an understanding of how attitudes form and change in three critical contexts. The first context is the person, as attitudes change in connection to values, general goals, language, emotions, and human development. The second context is social relationships, which link attitude change to the communicator of persuasive messages, social media, and culture. The third context is sociohistorical and highlights the influence of unique events, including sociopolitical, economic, and climatic occurrences. In conclusion, many important recent findings reflect the fact that holism, with a focus on situating attitudes within their personal, social, and historical contexts, has become the zeitgeist of attitude research during this period.



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THE MEANING OF AND INTEREST IN ATTITUDES

The study of attitudes is the study of evaluations, and it has been part of social psychology since that field first emerged with Thomas & Znaniecki's (1918–1920) *The Polish Peasant in Europe and America*. The term attitude was initially used by Jung (1923) in his writing about psychological types to describe a readiness to respond, a definition later incorporated by Allport (1935). However, as there are no guarantees that, for example, liking a political candidate will yield support for that candidate at the polls, overt behavioral responses are no longer part of the definition of attitudes. Rather, the attitude–behavior relationship is best seen as an empirical question outside the definition of attitude, a definition that simply focuses on the evaluative nature of attitudes as favor or disfavor.

Attitudes have a subject matter (referred to as the object or target), which can be an object, a person, or an abstract idea. Attitudes are thus relevant to many disciplines, including marketing (e.g., attitudes toward products), advertising (e.g., attitudes toward advertisements), political behavior (e.g., attitudes toward political candidates, parties, or voting), and health (e.g., attitudes toward protective behaviors, new medications, or the health system). Attitudes toward other people are studied in the domain of interpersonal liking, attitudes toward the self in the domain of self-esteem, and attitudes toward abstract ideas in the domain of values. Attitudes can be specific, or they can generalize across objects, with people holding attitudes that are either generally positive or generally negative (Hepler & Albarraçin 2013). The contemporary representation of a hater comes to mind when we consider general attitudes, which are dispositional evaluations irrespective of the object.

Attitudes can be measured by simply asking respondents to report their attitudes or by inferring attitudes from spontaneous evaluative reactions to the presentation of the attitude object (see Ehret et al. 2015). Indirect measures of attitudes, referred to as implicit measures, are designed to assess automatic evaluations that may be dissociated from the explicit, self-report measures but may still predict behavior in some contexts (e.g., Sheets et al. 2011, Stanley et al. 2011). Although the introduction of implicit measures has probably been the most notable change in attitude research over the past two decades, interest in attitudes has remained fairly stable over time. A search for research on attitudes in the *Journal of Personality and Social Psychology* since its first publication shows ongoing interest. Specifically, in an analysis of one issue in every five years since the journal's inception, a count of articles whose abstracts mention attitude, persuasion, belief, opinion, or evaluative judgments reveals that such articles comprise a fairly steady 20% of publications. As shown in **Figure 1**, there is sustained and long-standing scholarship in this area over the course of no less than six decades.

Covering the vast field of attitudes within the space constraints of this review is a challenge. We therefore make important choices, focusing on the literature published between 2010 and 2017,

Attitude: a person's evaluation of an object on a favorable to unfavorable continuum

Value: attitude toward an abstract entity

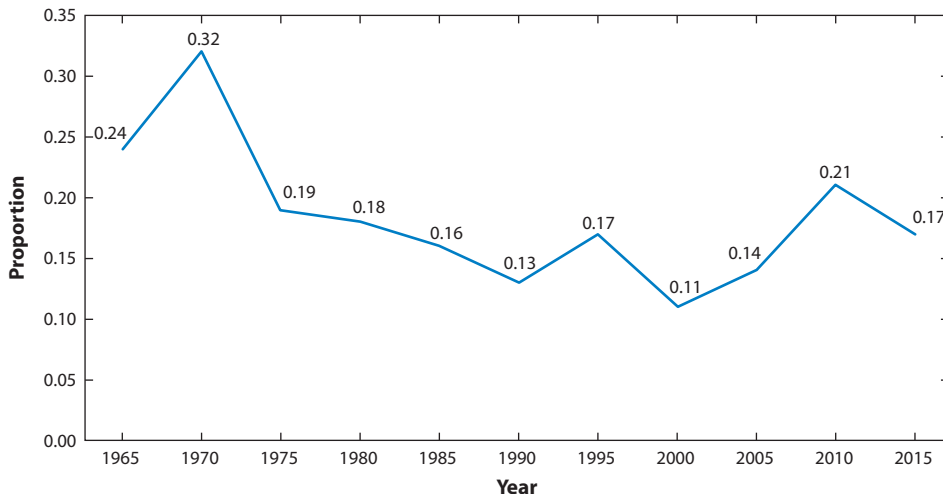


Figure 1

Proportion of articles in the *Journal of Personality and Social Psychology* whose abstracts mention attitude, persuasion, belief, opinion, or evaluative judgment.

to continue where coverage ended in a previous *Annual Review of Psychology* article on attitudes and attitude change (Bohner & Dickel 2011). We performed several systematic PsycINFO searches, using attitude change as a keyword to search all psychological outlets and attitude as a keyword to search social psychological outlets. We also conducted more targeted PsycINFO searches for attitude and value, attitude and goal, attitude and emotion, attitude and metaphor, attitude and language, attitude and source, and attitude and network. For areas with multidisciplinary appeal, we searched Google Scholar and included other behavioral science outlets (e.g., in consumer behavior). This review is intended to identify contributions about generational and developmental effects on attitudes, historical effects on attitudes, and the cultural context of attitudes. Regrettably, space constraints prohibit us from covering some important areas, including the vast literatures on prejudice and on evolutionary influences on cognition and motivation, even though they sometimes address attitudes and attitude change. We are confident that other reviews will fill these gaps.

ATTITUDE CHANGE

On our optimistic days, we assume that our children will enjoy cleaning their rooms and that American citizens will support the right candidate and actually vote on election day. Likewise, public policy makers continue to search for the optimal fear appeal to curb smoking, scientists hope for representatives' understanding and approval of research funding, and fundraisers seek ways of increasing philanthropy and support for valuable causes. In other words, we all hope for the right attitudes and count on attitude change and behavior in a myriad of socially relevant areas. But what can we say about how much attitudes actually change?

One approach to addressing this question is conceptual: The degree of attitude change depends on whether one adopts a theoretical conceptualization of attitudes as being crystallized in memory, as in-the-moment evaluations, or as hybrid structures. When attitudes are defined as a fixed memory, stored permanently for later retrieval when the opportunity and the need arise, change is difficult to explain. When attitudes are defined as constructed based on temporary considerations, such as the perceiver's mood at a particular time (Schuldt et al. 2011), attitudes are always changing.

Attitude change: movement from one evaluative category to another (e.g., favor to disfavor)

Most likely, attitudes are partly memory based and partly constructed on the fly (Albarracín et al. 2005), which would be consistent with a contemporary understanding of information processing as a neural network in which activation patterns stem from situational constraints as well as chronic connection weights (see Calanchini & Sherman 2013, van Bavel et al. 2012). This hybrid model allows for attitude stability as well as change.

The second approach to degree of change is to answer the question asked by policy makers and other stakeholders: If we measure attitudes at two points in time, how much of a difference will we notice? All studies of attitude change are relevant to this question, with meta-analyses providing appropriate estimates of average change in response to communications or interventions. Recent research includes experiments designed to produce attitude change in the laboratory, as well as interventions conducted in the field. The area of intergroup attitudes provides examples of how much change we can expect. In laboratory studies, even simply imagining intergroup contact appears to shift evaluations (Miles & Crisp 2014). A synthesis of research in which participants were asked to imagine contact with an outgroup member revealed $d = 0.36$ for explicit attitudes ($U3 = 64\%$) and $d = 0.31$ for implicit attitudes ($U3 = 62\%$) (Miles & Crisp 2014). These results reveal that 14% of participants who imagined outgroup contact were likely to have more positive explicit attitudes than those who did not imagine. Correspondingly, 12% of participants who imagined outgroup contact were likely to have more positive implicit attitudes than those who did not imagine.

A meta-analysis by Lemmer & Wagner (2015) focused on field interventions to reduce intergroup conflict that introduced contact between two ethnic groups. This meta-analysis revealed that, immediately after contact, approximately 61% of the participants in the interventions had positive intergroup attitudes, versus 50% of those participants not having contact ($d = 0.28$, $U3 = 61\%$). Diversity training, often implemented in organizational settings, has similar effects on attitudes ($d = 0.23$, $U3 = 59\%$; Kalinoski et al. 2013). In conclusion, some attitude change is possible even in domains that are traditionally resistant to change.

Many programs designed for the real world pursue changes in behavior and often do not measure changes in attitudes. However, a recent meta-analysis (Tyson et al. 2014) assessed attitude change in response to interventions to reduce risky sexual behavior both immediately after the intervention and following a delay. Regardless of the time of assessment, the effect of the interventions was $d = 0.257$, which implies that 60% of the recipients experienced change following the intervention, versus 50% in the absence of an intervention. Another meta-analysis (Steinmetz et al. 2016) was conducted to measure the average effect of interventions designed on the basis of the theory of planned behavior (Ajzen & Madden 1986) and yielded similar conclusions. The domains of these programs varied greatly. Of the interventions, 33% targeted physical activity, 19% nutrition, 16% work or study issues (e.g., ergonomic behaviors, stress management), 11% alcohol and drug use, 8% adherence to medical regimens, 7% driving behavior, 4% sexual behavior, and 2% hygiene. On average, these programs were associated with a $d = 0.24$ for attitude change, an effect size that can be visualized by thinking that 59% of intervention recipients were likely to have more positive attitudes relative to 50% of the nonrecipients.

Research conducted in the laboratory can often obtain stronger effects than field studies for several reasons, including better control of distraction and reduced random error. During the past few years, a synthesis of experimental research on fear appeals was conducted to demonstrate the extent to which fear could lead to attitude, intention, and behavior change (Tannenbaum et al. 2015). In this synthesis, the researchers compared messages designed to induce a high level of fear in such diverse areas as health, financial decisions, and driving safety. The results for attitudes showed an average change of $d = 0.20$ ($U3 = 57\%$).

All in all, attitude change based on interventions or messages delivered at a particular time hovers around $d = 0.22$, which is a small effect. However, this change may, in some cases, be quite durable, as beliefs and attitudes have been known to persist despite attempts at correction (for a recent treatment of these issues, see Chan et al. 2017). Motivated cognition suggests that attitudes and beliefs that are consistent with other values are likely to persist. Defensive cognitive processes can be recruited to protect the attitudes and beliefs, particularly when accuracy motivation is low (Hart et al. 2009), and people set high thresholds of evidence to refute cherished points of view (Hart et al. 2009). Belief persistence, however, obeys other mechanisms, as well. For example, Ecker and colleagues (2014) introduced the belief that the suspect of a crime scenario was an Australian Aboriginal. The degree of later correction of this information, however, was unrelated to prejudice, suggesting the involvement of nonmotivational processes. Moreover, initial beliefs persist more when people generate reasons why the initial information is true but correspondingly less when they generate reasons why alternate scenarios might be true (Chan et al. 2017). A mental model of reasoning (Chan et al. 2017) details how people construct a web of mental models from which they derive causal conclusions. New information tends to produce new or extended models of explanation without leading people to discard key information not explained by the new model (Chan et al. 2017). Therefore, effective corrections must provide a causal alternative to fully explain mental models. For example, effective corrections of climate change denial must account for random variability in temperature in addition to introducing fossil fuel burning as the explanation for systematic temperature increases (Jamieson & Hardy 2014).

Attitudes are of particular concern in the area of climate change, where scholars and practitioners are investigating the potential for reducing climate change denial. Recent research has wrestled with the irony of strong extant climatological evidence accompanied by public disbelief and denial (Mercier 2016, Mercier & Sperber 2011). Naturally, cultural representations can be slow to align with scientific evidence, but progress has been made in other areas, including public acceptance of the health dangers of smoking (Ranney & Clark 2016). An apparent roadblock to aligning attitudes with scientific evidence is difficulties in teaching audiences about the mechanisms of global warming. In a series of experiments (Ranney & Clark 2016), participants were instructed about climate change mechanisms and completed measures of knowledge and beliefs before and after the instruction. Effects on knowledge were easy to obtain in most areas and were also large following instruction about climate change mechanisms (Ranney & Clark 2016). Belief change was also quite large, with 99% of the participants accepting climate change postinstruction relative to 50% preinstruction (Ranney & Clark 2016, experiment 2; $U_3 = 99$). Of course, this is a relatively simple belief change, as opposed to the aforementioned attempts at changing more complex intergroup attitudes or health behaviors.

A sustained interest in the study of implicit attitudes has generated fascinating demonstrations of the effects of unique and historic events. The election of Barack Obama to the US presidency was such an event and provided the perfect natural experiment for the study of implicit racial attitudes as a function of media display of a Black person occupying a high-status position (Roos et al. 2013). This work was conducted in the United States and in Canada, assuming differential media coverage and, therefore, differential attitude change following the 2008 election (Roos et al. 2013). Implicit attitudes were measured using evaluative priming, a procedure that connects spontaneous activation of positive versus negative concepts to a stimulus—in this case, Black and White faces. Our calculation of the degree of change the authors observed in the United States reveals $d = 0.55$ and Cohen's $U_3 = 71\%$. This sizable effect implies that US implicit attitudes toward Blacks were 21% more positive after the election than before it.

Changes in implicit attitudes are promising, although still not an assurance of changes in behavior. In particular, a meta-analysis of implicit attitudes as predictors of behavior revealed an

average correlation r of 0.15 or 0.12 for racial and intergroup attitudes (Oswald et al. 2015). These attitudes were measured using the implicit association test (Greenwald et al. 2015), developed and refined in prior decades with the goal of circumventing social desirability concerns and the common reluctance to express prejudicial attitudes. Although earlier estimates of these associations were only moderately higher ($r = 0.24$ and $r = 0.20$ for racial and intergroup attitudes, respectively; Greenwald et al. 2009), the recent low associations suggest minimally consequential changes, at least with the current measurement instruments (Oswald et al. 2015; see also Greenwald et al. 2015). Cameron et al. (2012), Galdi et al. (2012), and Meissner & Rothermund (2013) provide analyses of other implicit measures.

TOWARD A HOLISTIC UNDERSTANDING OF ATTITUDES

The longstanding research interest in attitudes has uncovered many details about the cognitive and motivational processes of attitude formation, attitude change, attitude–behavior correspondence, and persuasion. A careful look at the most recent work brings to light some qualitative changes in the scientific agenda in recent years, i.e., a shift from a focus on microprocesses to a more holistic, contemporary understanding of attitudes as they exist in three fundamental contexts: (a) the person as a whole, in relation to values, broad goals, language, emotions, other attitudes, and the lifespan; (b) the social context, including communicators, as well as social media and social networks; and (c) the broad context, particularly the sociohistorical context, in relation to the generational, cultural, and historical backdrop of attitudes.

The Person as Context

The first context is that of the person as a whole. In this section, we consider the powerful role of a person’s values, general goals, emotions, linguistic processes, evaluative processes, life span and developmental aspects, and temporal and spatial context in shaping their attitudes and persuasion processes.

The context of values. Attitude scholars have traditionally had an interest in values, defined as attitudes toward abstract entities. For instance, a person with universalist values probably has a favorable attitude toward policies that foster equality; a person with security values is likely to favor policies that assure safety and stability in their environment. These values exist within a motivational structure that often links values to support for particular policies (e.g., Schwartz et al. 2012), although the influence of values is often tempered by other considerations. Over the past several years, interest in values has burgeoned.

A series of recent experiments (Wolsko et al. 2016) has provided a compelling demonstration of how linking a specific advocacy to broad values can shift attitudes toward a policy. When it comes to environmental attitudes, liberals see damage to the environment as an injustice, which easily connects with liberals’ preoccupation with harm and care. Media messages about environmental issues advocate these values, which leaves these communications in a situation of preaching to the choir while neglecting the unconverted (Feinberg & Willer 2013, Wolsko et al. 2016). Wolsko and colleagues (2016) designed a series of studies crossing liberal and conservative ideologies with environmental messages that appealed to either individualizing or binding morals. Individualizing values include concern about caring, nurturing, and protecting vulnerable individuals from harm. For instance, a statement of individualizing values might be, “Show your love for all of humanity and the world in which we live by helping to care for our vulnerable natural environment” (Wolsko et al. 2016, p. 9). Binding values involve ingroup loyalty, authority, respect, and purity or sanctity.

For instance, a statement of binding values might be, “Show you love your country by joining the fight to protect the purity of America’s natural environment” (Wolsko et al. 2016, p. 9).

The results from four experiments converged on the conclusion that liberals had equally strong intentions toward conservation regardless of the type of appeal they received. In contrast, conservatives had stronger intentions after receiving the binding message than after receiving either the individualizing message or a control message. Attitudes toward climate change were also measured by asking participants to rate statements such as, “The seriousness of climate change is exaggerated.” As with intentions, the attitudes of liberals were similarly in favor of policies to counter climate change in the individualizing, binding, and control conditions alike. The attitudes of conservatives, however, were more positive in the binding condition than in the individualizing or control conditions.

Within the spectrum of conservative ideology, the influence of values on attitudes appears to interact with prevailing social norms. Research conducted by Oyamoto et al. (2012) considered this possibility in a large experiment conducted via a phone survey of a diverse US sample. Authoritarian upbringing was gauged by endorsement of respect and obedience (versus independence and self-reliance). Attitudes toward immigrants were measured with reports of feelings toward legal immigrants, which correlated negatively with authoritarian upbringing. Furthermore, participants were informed that Americans’ feelings were generally positive, mixed, or negative toward immigrants—a manipulation of social norms. The effects of these norms on attitudes depended not only on authoritarian upbringing but also on participants’ current level of humanitarian values, measured with items such as, “Those who are unable to provide for their basic needs should be helped by others.” Among participants reporting a more authoritarian upbringing, those with more humanitarian values exposed to the mixed norm reported more liking for immigrants than in the other conditions. Participants with authoritarian upbringing, however, reported more dislike for immigrants when exposed to the negative norm. Overall, then, humanitarian values attenuated xenophobic attitudes when the norm was mixed but increased xenophobia when the norm was negative.

Just as certain values modulate the impact of conservative social norms, values can also govern the impact of conservative advocacies. In particular, egalitarian values are often invoked to oppose affirmative action policies that recommend paying attention to traditionally underrepresented groups in educational and work settings. Therefore, invoking these values can increase the persuasiveness of communications condemning affirmative action. Research conducted by Blankenship et al. (2012) has shown that general messages about the value of equality were more successful at decreasing support for affirmative action than were messages directly attacking affirmative action. Furthermore, when values were easily accessible from memory, highlighting them had little effect. However, when values were not easily accessible, bringing them to mind decreased acceptance of affirmative action policies (Blankenship et al. 2015).

Both self-interest values and moral values can legitimize attitudes and make it subjectively appropriate to act on those attitudes (Miller & Effron 2010). One basis for this legitimacy is the personal relevance of an issue. For example, gay marriage is personally relevant to gays and lesbians who are likely to experience direct consequences from the policy. In addition, moral values can legitimize action independently of material self-interest (Effron & Miller 2012). In line with a moral legitimacy effect, participants reported feeling more comfortable taking action on policies that were not materially relevant to them (e.g., pro-choice issues for males) when they moralized the issue (Effron & Miller 2012).

Even though moral values and material self-interest can both guide attitudes, the relative weight of each interest type can be impacted by temporal distance. A persuasive message presented to non-White college students announced a reduction of financial aid for minority students (Hunt et al. 2010). The students were told that reduction would either take effect immediately or be

Norm: shared societal or situational expectations that can shape attitudes and guide behavior

General action goal: effortful end state that can be satisfied by various cognitive and physical behavioral means

implemented a year later, thus varying temporal distance to be either short or long. Self-interest was measured as financial strain, and values were measured as social dominance orientation. According to construal level theory (Wakslak et al. 2007), psychological distance alters the basis for decisions. When considering imminent decisions, concrete, material considerations receive more weight. In contrast, when considering delayed situations, abstract considerations receive more weight. As predicted, when the policy was to be effective immediately, material self-interest was the primary motivation for opposing the policy. However, when the policy was less imminent, political values were the primary driver of the opposition.

Abstract values are appropriate guides for attitudes in a number of contexts. Research conducted in Brazil, New Zealand, and South Africa provided a unique demonstration of the value-to-attitude pathways, as well as the fact that attitudes act as partial mediators of the influence of values on behavior (Milfont et al. 2010). Across countries, self-interest values predicted negative attitudes toward environmental issues, whereas altruistic values predicted favorable attitudes toward environmental issues. These attitudes had a moderate association with environmental behavior, an association that included the indirect effect of altruistic (but not self-interest) values. Overall, then, this work is another demonstration that attitudes are embedded within a network of values that must be taken into account to understand the influence of attitudes on behavior.

The context of goals. Attitudes can be brought to mind in the service of action goals, as in the case when considering a behavioral goal reminds us of what we like and dislike about the execution and outcomes of the behavior. General action and inaction goals are a particular type of overly general goal that have received research attention in the past few years. General action has been defined as motor or cognitive output, and general inaction has been defined as the lack of action (Albarracín & Handley 2011, Albarracín et al. 2008). The action end of the action–inaction continuum comprises intense or frequent motor and cognitive behavior, whereas the inaction end comprises neither motor nor cognitive behavior (e.g., non-REM sleep). The action end includes important, well-planned, effortful behaviors such as acquiring knowledge, as well as seemingly undemanding behaviors such as eating when food is present. General action and general inaction can be set to guide people toward activity or inactivity end-states, respectively, which are, in turn, achieved by temporarily accessible or chronically available behavioral means. These action and inaction goals have important implications for attitude activation and change.

In research conducted by Albarracín & Handley (2011), experimental participants primed with general action or inaction goals reported prior attitudes toward a topic after being (versus not being) forewarned that they would receive a message about a topic. The role of general goals becomes clear in association with the more specific goals people have in the moment (Albarracín & Handley 2011). Therefore, when people activate a general action goal in the context of processing a persuasive communication, the general action goal may be fulfilled by the specific goal of thinking about prior attitudes. Thus, prior attitudes are likely to become more accessible and, in turn, block the influence of the message.

Albarracín & Handley (2011) tested various aspects of the influence of general action goals on attitude accessibility and change. Participants previously primed with action (e.g., go), control (e.g., pear), or inaction (e.g., rest) words completed measures of attitudes toward gun control or euthanasia after they had or had not been forewarned that they would receive a persuasive message about either gun control or euthanasia. Findings indicated that attitudes that were relevant to the message were reported faster in action than in inaction goal conditions, whereas irrelevant attitudes were not affected. Further studies showed less attitude change when forewarned participants were primed with action than when they were primed with inaction and that action goals generally decreased elaborative processing of the persuasive message. Unfortunately, some

of these experiments had low statistical power, an issue that has been linked to false positives only in recent years (Simmons et al. 2011). Therefore, further research in this area is important to, first, identify strong manipulations and, then, implement designs that maximize statistical power.

Research on attitudes has also uncovered broad evaluative responses toward action and inaction. All else equal, people appear to evaluate action more favorably than inaction. Words like action are evaluated to be more positive than words of inaction, even when the inaction word is one with pleasant connotations, such as calm (McCulloch et al. 2012). It may, therefore, be adaptive for social groups to instill favorable attitudes toward action, leading to action being positive by default. This pattern, however, is associated with Christian beliefs, suggesting that part of the action positivity effect derives from the overgeneralization of an ethic in which work is virtuous and inactivity is sinful.

Even though unspecified action is generally perceived to be positive, a switch in norms may lead perceivers to refocus and reevaluate action and inaction. When action is described as positive within a particular investment firm, participants who make financial decisions regret losing after not investing more than losing after investing (Feldman & Albarracín 2016). In contrast, when inaction is described as positive within a particular investment firm, participants who make financial decisions regret losing after investing more than losing after not investing (Feldman & Albarracín 2016). Therefore, despite an overall favoring of action, people are highly sensitive to normative information and can shift their evaluations according to the context.

The context of language. Another area receiving considerable attention concerns linguistic processes that affect attitude formation as well as attitude–behavior correspondence. The use of metaphors and their impact on attitudes is one important focus of investigation. For instance, reading about the police as either guardians or warriors led to, respectively, more and less liking for the police (Thibodeau et al. 2017). These effects were due to metaphors operating as an explanatory device rather than simply activating semantic concepts with different evaluative implications.

Interestingly, the use of metaphors is apparently dependent on the degree of psychological distance (Liberman & Trope 1998) of the object or situation being explained. Given that metaphors are used in explanation of abstract rather than concrete concepts, greater psychological distance from a concept should increase the likelihood of using metaphors for explanation. Furthermore, people may actively seek metaphors more often to understand psychologically distant concepts than psychologically close concepts (Jia & Smith 2013). The metaphor that an influx of immigrants is analogous to physical contamination of the body leads to negative attitudes toward immigration. However, this metaphorical impact is stronger when people think about immigration a year in the future than when they think about immigration a day in the future (Jia & Smith 2013).

Recent research has also shed new light on the role of self-talk, or inner speech, in attitude formation, as well as its role as a precursor of behavioral performance. The majority of adults report engaging in an ongoing internal dialogue, or self-talk, generally covertly. People may repeat sentences (e.g., “You/I can do it!” “Stay focused!”) if they believe this speech will motivate them (Dolcos & Albarracín 2014). The structure of this talk, particularly the effects of the use of the first or second person in self-talk as well as the role of self-posed questions, is beginning to be the subject of research. When people face challenges or when their past behavior has yielded undesirable outcomes, the self splits into a speaker and a receiver, leading to addressing the self in the second person (Zell et al. 2012a). This form of second-person self-talk is supposedly beneficial for self-regulation because it resembles the form of external control experienced by children (Dolcos & Albarracín 2014, Zell et al. 2012a). Therefore, such self-talk is probably a natural way of controlling behavior later in life (Dolcos & Albarracín 2014, Zell et al. 2012b).

Self-talk:

self-directed inner speech, often designed to control behavior

In research conducted by Dolcos & Albarracín (2014), participants were randomly assigned to one of two experimental groups (i.e., You or I self-talk conditions) or to a control group. Participants were then given the opportunity to choose to work on anagrams and received instructions to prepare for the task by writing self-directed advice. Participants in the control condition completed the anagrams without this type of preparation. As the researchers predicted, participants who prepared for the anagram task using sentences beginning with “You” performed better on the task than participants who wrote sentences beginning with “I” or participants in the control condition. More importantly for this review, attitudes followed the pattern of behavioral performance and were mediators of the effect of the second-person self-talk. These results imply that, even though second-person self-talk is more commanding than first-person self-talk, the impact of the second person still resembles that of intrinsic motivation. Research on self-talk has also been conducted in the area of social anxiety (Kross et al. 2014) and promises to generate important insights in the years to come.

How people use verbs has been another focus of attention in the area of attitudes, particularly with respect to the use of past and present and their influence on attitude–behavior correspondence. For example, if people recount a past experience drinking alcohol, does using the present or the past tense affect reliance on past behavior as a basis for intentions to drink again in the future? Carrera and colleagues (2012) sought answers to this very question. In their work, participants wrote a description about alcohol drinking using either the simple past or the present tense. They also reported their attitudes toward drinking and their intentions to drink again in the future, as well as the frequency of past alcohol drinking. Consistent with the possibility that the past involves greater psychological distance than the present, attitudes predicted intentions better when drinking was described in the past tense than when it was described in the present tense. In contrast, past behavior predicted intentions better when drinking was described in the present tense than when it was described in the past tense.

The context of emotions. Even though emotions are relevant to many attitude domains (see Clore & Schnall 2005), they appear to be particularly relevant to political attitudes of various types. For example, during times of war, presidential approval, an attitude toward the president’s performance, can depend on the specific emotions of anger and anxiety (Lambert et al. 2010). The term “rally around the flag” describes political situations in which an external threat enhances support for an otherwise unappreciated right-leaning president. In Argentina, General Galtieri was president toward the end of a drawn-out military dictatorship responsible for international isolation, 30,000 missing people, and a large number of political prisoners. When he went to war against the United Kingdom, however, his approval rating soared, and supportive citizens filled May Square in Buenos Aires. Likewise, in the United States, George W. Bush enjoyed a similar trajectory when his approval ratings moved from 39% to 90% following the attacks on September 11, 2001. According to Lambert and colleagues (2010), the impact of 9/11 on attitudes toward Bush was mediated by corresponding increases in anger and anxiety. In an experimental presentation of 9/11 footage years after the event, participants’ retrospective approval of Bush was higher after the 9/11 video than after a control video, and these attitudes were mediated by the specific emotions of anger and anxiety, whereas more general negative emotions had no influence (Lambert et al. 2010).

Emotion regulation strategies can also exert an impact on political attitudes. Intergroup attitudes in the Israeli–Palestinian conflict were investigated, in the area of emotional regulation, by Halperin et al. (2013). In their first study, Halperin et al. (2013) asked half of their participants to apply a cognitive reappraisal technique as they viewed an upcoming presentation. Specifically, they were taught to respond to the presentation as if they were scientists, thinking analytically

in a cold, dispassionate way. After this manipulation, all participants watched an anger-inducing multimedia presentation about Israel's disengagement from the Gaza Strip and subsequent Palestinian aggression. The cognitive reappraisal technique was effective at reducing anger toward Palestinians, anger that, in turn, correlated negatively with support for conciliatory policies and positively with support for aggressive policies. Although the study had a relatively small sample ($d = 0.65$, $N = 39$), similar findings were obtained in a second experiment with measures of anger and attitudes obtained 5 months after the manipulation of cognitive reappraisal (Halperin et al. 2013).

The context of other attitudes and evaluative processes. As researchers have opened their eyes to broad attitude patterns, it has become apparent that people's attitudes can be similar across different objects. In particular, shared affective traits can provide information about attitudes regardless of whether the object is President Trump, a new movie, or a toaster. Recent research has investigated this possibility in a series of studies and an independent replication and extension. In this work, Hepler & Albarracín (2013) investigated tendencies to generally like or dislike stimuli, defined as systematic variation in attitude valence as a function of individuals. These dispositional attitudes were measured by having participants evaluate a large number of stimuli to gauge central tendencies. From an initial set of 200 evaluations, findings yielded a final scale of 16 items about diverse objects such as taxidermy, cold showers, soccer, and politics, rated on scales from 1 (unfavorable) to 7 (favorable). This scale had high internal consistency, as well as high test-retest reliability, and exhibited good convergent and divergent validity. In particular, dispositional attitudes should be related to other traits associated with positive or negative affect (e.g., extraversion, optimism) and, indeed, were. However, all of these personality measures accounted for only about 20% of the variance in general attitudes, hinting at the uniqueness of dispositional attitudes.

General or dispositional attitudes are also useful because they can predict unknown attitudes, including attitudes toward completely novel objects. Two of the studies reported by Hepler & Albarracín (2013) obtained measures of dispositional attitudes, other traits, and attitudes toward a never-encountered microwave described in an advertisement. Reported attitudes toward the new product were consistently predicted by dispositional attitudes above and beyond all other individual difference measures (e.g., behavioral activation, optimism, trait negative affect, trait positive affect, agreeableness, need for cognition, need for closure, and more). Therefore, people who generally liked objects also liked a newly presented object, whereas people who generally disliked objects disliked it.

An intriguing implication of dispositional attitudes is that they should be expected to also broadly predict behavior, a possibility examined by Hepler & Albarracín (2014; for a replication, see Eschleman et al. 2015). Over two experiments, participants reported their dispositional attitudes as well as their time spent on a number of daily behaviors, such as personal care, education, working, and traveling. Dispositional attitudes correlated with the number of behaviors reported, but this was the case for both more and less effortful behaviors. Thus, dispositional attitudes appeared to predict behavior on the high-effort, active end as well as the low-effort, inactive end. Apparently, then, dispositional attitudes do not predict only active behavior but rather goal engagement, including sleeping, more generally.

Individual differences in evaluations have also been described as valence weighting. The valence weighting bias (Pietri et al. 2013) has been studied with a paradigm in which participants learn about beans of varying shapes and patterns of speckles that produce either positive or negative outcomes when selected. After participants learn about the beans, they are presented with new beans that resemble previous positive or negative beans. Thus, when a novel bean has characteristics resembling both a positive and negative bean, a participant who weighs negative information more heavily

General or dispositional attitude: attitudes that characterize the person as evaluating most objects positively, neutrally, or negatively

should classify that bean as negative, whereas a participant who weighs positive information more heavily should classify that bean as positive. Rocklage & Fazio (2014) used this same paradigm to obtain participant measures of valence weighting. Similar to the conclusions of Hepler & Albarracín's studies, this individual difference measure predicted approach and avoidance behavior toward objects in a novel environment. Also, participants with a negative-valence-weighting bias were more likely than those with a positive-valence-weighting bias to change attitudes in response to negative but false information about an object.

The context of time and space. Above, we discuss the impact of psychological distance on attitudes in the context of language and emotion. Beyond these areas, the effects of construing objects up close and at a distance have also been the subject of research on what factors influence attitudes. According to construal level theory (Liberman & Trope 1998), people construe psychologically proximal objects more concretely. Based on this premise, Ledgerwood et al. (2010) hypothesized and confirmed that attitudes toward proximal objects were influenced by social information, such as the preferences of romantic partners. In contrast, attitudes toward more distant objects were less influenced by social normative considerations and, in one of the experiments, were influenced by values. Some of these experiments were statistically underpowered (less than 80% power), implying that the probability of both false negatives (power is the confidence with which the null hypothesis may be rejected) and false positives is potentially high. However, the findings illustrate an important aspect of the broader picture of attitude bases.

The context of development. The developmental stage and childhood socialization of the individual is another fundamental context within which attitudes are shaped and reshaped. Recent research has investigated a variety of developmental and life-stage factors that predispose individuals to particular attitudes and ideologies.

Shifts in specific attitudes across the life span. Developmental shifts are observable in attitudes toward several specific topic areas. For instance, music preferences are subject to a variety of developmental shifts across the life span (Bonneville-Roussy et al. 2013), and these shifts shed light on the contextual factors that shape personal tastes. Adolescent audiences are more passionately engaged with music, regarding it as more important than do older adults and enjoying it in more contexts. Moreover, data from an Internet survey sample of a quarter million respondents showed marked and consistent age trends in musical preferences (Bonneville-Roussy et al. 2013). Specifically, preferences for mellow, unpretentious, and sophisticated music increased throughout the life span, whereas preferences for music that is intense and more contemporary was highest in adolescents and declined in later years. This latter finding not only gives hope to parents of teenage death metal fans but also supports the notion that the personality traits and psychosocial goals that characterize each stage of life give rise to distinct musical tastes. For example, intense music is perceived as “aggressive, tense, and antiestablishment” (Bonneville-Roussy et al. 2013, p. 12; see also Rentfrow et al. 2011), which may be more resonant with the needs of adolescents struggling with issues of identity development and autonomy. Consistent with this possibility, research also points to age-specific preferences for particular types of media content (for a review, see Valkenburg et al. 2016). Anyone who has ever spent an evening observing ticket buyers at the multiplex will not be surprised to learn that younger adults show a stronger preference for arousing, frightening, and even violent media content compared to middle-aged and older adults, who, in turn, show stronger preferences for calmer, more uplifting, and more meaningful media content (e.g., Mares & Sun 2010).

Beyond the realm of individual tastes, developmental shifts in self-focused attitude domains have been important subjects of investigation. For instance, attitudes toward the self (i.e., self-esteem) show age-related shifts that follow a quadratic trend across the life span, climbing from adolescence until middle age (approximately 50–60 years) and then decreasing in old age, largely due to declines in health and socioeconomic status (Orth et al. 2010, 2012). Moreover, self-esteem has a significant influence on personal experiences across all major life domains (Orth et al. 2012). Attitudes toward one's own aging have also been investigated (Miche et al. 2014) and are shaped by a variety of life-stage and health factors. Finally, researchers have examined the relationship between age and job attitudes, finding a positive relationship between age and overall job satisfaction (for a meta-analysis, see Ng & Feldman 2010).

Materialism: a belief or ideology emphasizing the importance of pursuing financial success, material riches, and high status through consumer choices

Developmental antecedents of attitudinal systems. Using data from a two-wave national survey of early child development, in which parents of 1-month-old infants were interviewed and the children were surveyed 18 years later, Fraley et al. (2012) examined how early caregiving environments help to shape conservative versus liberal political ideologies in late adolescence. Parents who endorsed more authoritarian attitudes regarding parenting when their children were infants tended to raise children who were more ideologically conservative. Additional data on the sample's temperament in early childhood (age 4.5) suggested that children who showed early signs of a fearful temperament or had deficits in inhibitory control tended to become conservative by age 18, whereas children who showed high levels of activity and restlessness in early childhood tended to become liberal as young adults. These findings support a motivated social cognition perspective that casts conservatism as a motivated response to anxiety and fear and liberalism as a response to restlessness and undercontrolled ego-related functions.

Another form of ideology, materialism, has also been a focus of developmental research. Twenge & Kasser (2013) examined societal factors that influence the development of materialistic values. Their analysis pointed to middle childhood as a particularly important time in the development of late-adolescent materialism. Those who, during this life stage, experienced high levels of societal instability and disconnection (indexed by societal rates of unemployment and divorce) tended to become more materialistic 10 years later, as young adults. Similarly, those exposed to high levels of social modeling of consumerist practices (as indexed by societal advertising spending) in late childhood were also more likely to become materialistic as young adults. Fortunately, a study of 12–18 year olds suggested that parental and peer influences during childhood can mitigate the development of materialistic attitudes in adolescents (Chaplin & John 2010). By contributing to the growth of self-esteem in adolescents, parents and peers can decrease the tendency to look to material goods as ways to build positive self-views.

Developmental shifts in processing. According to socioemotional selectivity theory (Carstensen 2006) motivational shifts across the life span affect the selective processing of information. In contrast to younger people, who are motivated to pursue goals of acquiring knowledge and broadening horizons, older adults, as they grow to appreciate the fragility of life, increasingly prioritize present-focused goals of emotional satisfaction and meaning. This change in goals leads to a shift toward positive information in information processing as people age, a phenomenon referred to as the age-related positivity effect (e.g., Reed et al. 2014). A recent meta-analysis confirmed that, when information processing is unconstrained and people are allowed to allocate their attention spontaneously, older people are significantly more likely to attend to and recall positive than negative information, whereas the opposite pattern is seen among younger adults (Reed et al. 2014). This shift can be associated with a variety of effects in persuasion contexts, such as age differences

in responses to gain- and loss-framed messages (e.g., Mikels et al. 2016, Notthoff & Carstensen 2014).

Sleeper effect:

delayed persuasion of a message when presentation by a noncredible communicator serves as a discounting cue

The Social Context

Social inputs comprise a key contextual influence on attitudes. Therefore, understanding the role played by the views of others, whether message communicators, friends and network members, or social media inputs, continues to be a significant focus of attitude research.

The communicator. Persuasive communications entail an implicit or explicit interaction with the source of the message, a factor that has been of interest to researchers since the field of persuasion began. Recent findings underscore the importance of this relationship, for instance, by showing that the persuasiveness of messages can be enhanced by an alignment between a communicator's and an audience's power state (Dubois et al. 2016). Specifically, high-power communicators tend to generate messages that prioritize competence information, which is more persuasive to high-power audiences, whereas low-power communicators tend to generate messages with greater warmth, which is more persuasive to low-power audiences.

Recent research has also enhanced understanding of the processes surrounding source credibility, such as the sleeper effect. Classically, the sleeper effect involves an increase in persuasion following a delay after a message is presented by a noncredible source. For instance, recipients of political communications may discount a message from a political opponent because they do not perceive the source of the message as credible. Over time, however, the recipients may recall the message but not its noncredible source and, thus, become more persuaded than they were immediately after the message presentation (Kumkale & Albarracín 2004). The conditions for this effect have been well elucidated meta-analytically (Kumkale & Albarracín 2004), but the definition of the effect has typically been circumscribed to these situations.

In contrast to this classic scholarship, recent research has uncovered a different type of sleeper effect involving the communicator instead of the message itself. In the traditional sleeper effect, the influence of an otherwise effective message remains dormant because it has been discounted as coming from a noncredible source. However, it is conceivable that a favorable impression of a communicator may exert a delayed influence if it remains dormant after being discounted because of weak arguments (Albarracín et al. 2017). In a series of experiments, participants were induced to form impressions of communicators (e.g., political candidates) who provided noncompelling arguments. As predicted, under these conditions, the source's credibility had a delayed effect on the influence of the message; this effect occurred for various topics and delay lengths.

This novel type of sleeper effect is likely to take place in political campaign contexts, as well as other contexts in which evaluating the communicator is paramount. This novel finding confirms that message recipients can process information about the communicator in as much depth as information about the arguments. As is well known, sources and other cues to persuasion can have multiple roles—they can be processed as peripheral cues or processed in more detail (Wegener et al. 2010). This assumption of multiple roles in current versions of the elaboration likelihood model (Wegener et al. 2010) as well as the unimodel (Kruglanski & Gigerenzer 2011) highlights how most information can be processed either elaborately or nonelaborately. One recent demonstration of this possibility entailed an analysis of the attitude–behavior relationship. Specifically, attitudes formed on the basis of extensive information about a source, which supposedly elicits high levels of processing, were more persistent and predictive of behavior than attitudes formed on the basis of brief information about the source (Pierro et al. 2012). As persistence and impact on behavior are frequent consequences of high levels of elaboration (Barden & Tormala 2014, Howe & Krosnick 2017), this work shows once more that communicators can be the target of much attention and

thinking (for other research on the effects of concentrating on the communication source, see Clark & Evans 2014, Clark et al. 2013).

Social media and social networks. With the advent of smart phones and the popularization of online platforms, the study of media effects has moved into the territory of emerging media. Some of this work has achieved considerable methodological sophistication, as in longitudinal studies conducted in naturalistic conditions. For example, the effects of violent video game use on aggressive behavior (von Salisch et al. 2011) were studied using cross-lagged models in Germany. This study showed that children's aggressiveness predicted subsequent violent media use but that violent media use did not predict aggressiveness. Thus, the effects of violent video game use on aggressive attitudes are, at best, weak.

Buzz marketing, which leverages word of mouth from popular opinion leaders to change attitudes within a social network, offers substantial promise for persuasion and has received considerable scholarly attention (e.g., Berger 2014). The potential of buzz marketing is illustrated by a study of the effects of a health-promotion campaign developed and delivered through a partnership between the University of Nebraska and the Centers for Disease Control, which involved recruiting teenagers as buzz agents. The campaign ran between 2007 and 2013 and showed promising effects (Struthers & Wang 2016). Remarkably, 66% of buzz agents improved their attitude toward physical activity, 63% improved their attitude toward consumption of fruit, and 51% improved their attitude toward consumption of vegetables, with corresponding changes in behavior in all areas. In addition to the teenagers who acted as agents of change, other teens who liked the campaign changed attitudes more than those who did not like the campaign. Although this evidence does not imply that the campaign changed attitudes overall, it did change the attitudes of the teenagers who liked the campaign.

A similar campaign that included social media was designed to decrease comments expressing body dissatisfaction (fat talk) on college campuses (Garnett et al. 2014). The campaign was implemented in two New England universities. The campaign activities included hosting events about fat talk, teaching students how to promote positive body conversations, and encouraging students to sign an online pledge to end fat talk. One of the central messages was "Friends Don't Let Friends Fat Talk," and the organizers of the campaign recommended that this message be displayed online and in physical locations on the campuses. The campaign had a small effect on body dissatisfaction, defined as a negative attitude toward one's own body. In addition, actual reductions in negative self-talk were observed for students who remembered being exposed to the campaign, although the study was, overall, underpowered.

Network effects on attitudes have received some attention because of observed similarities in behavior among people who are socially connected. On the one hand, friends are likely similar because people develop relationships with similar others through a process of social selection. On the other hand, friends may become similar through their interactions with others, through a process of social influence. In the first case, the similarity precedes friendship; in the second, similarity follows friendship. In a longitudinal study of this issue (de Klepper et al. 2010), the attitudes toward discipline among students of the Royal Naval Academy of the Netherlands were followed over time, along with their friendship patterns. Findings indicated that similarity in attitudes toward discipline was due to influence rather than selection. Naval students had attitudes similar to those of their friends because they had become friends with others who had then influenced them.

The influence of members of an individual's social network is also apparent in work on how activating social goals can influence attitudes. Women's romantic goals, for example, can make them distance themselves from pursuing careers in science, technology, engineering, and math

Culture: a shared meaning system and common values held among people who share a geographic region, language, or historical period

Millennial: a member of the generation born between 1980 and 1994; their attitudes and ideologies have been the subject of extensive study

Cohort: a group born into the same generation

(STEM) fields (Park et al. 2011). Merely viewing images or overhearing conversations related to romantic relationships yielded less positive attitudes toward STEM fields, but this pattern was apparent only among women. Looking at the problem using a within-subject paradigm, women felt more desirable and engaged in more romantic activities on days when they pursued romantic goals. Unfortunately, however, on those same days, women pursued fewer math-related activities. This effect of romantic goals also appeared to persist over time, with romantic goals from the previous day making women less invested in math on the following day. Although these findings are discouraging for policy makers trying to increase representation of women in STEM fields, women's STEM presence may increase through the use of ingroup STEM experts promoting STEM fields to other women. In particular, these programs lead to more positive implicit and explicit attitudes toward STEM, as well as commitment to pursue STEM careers, among women (Stout et al. 2011).

The social functions of attitudes are an intriguing topic, and recent research has shed light on a broad set of interpersonal motives associated with attitudes. One such function is the feeling of familiarity experienced by people who share similar negative attitudes (Weaver & Bosson 2011). Apparently, sharing a negative attitude is sufficient to increase feelings of familiarity (Weaver & Bosson 2011), probably because expressing negative attitudes to strangers is counternormative in US culture. Another important social function involves attitudinal ambivalence as a way of smoothing over interpersonal differences (Pillaud et al. 2013). In particular, people express more ambivalence when issues are socially controversial, and experimentally increasing topic controversy leads individuals to manifest more ambivalence (Pillaud et al. 2013). Therefore, attitudes both influence relations with others and can be strategically altered for self-presentation purposes. Even in online contexts, communicating one's attitudes can serve a range of functions (including impression management, social bonding, and emotion regulation; Berger 2014).

The Historical Context

Achieving a holistic, contextualized understanding of attitudes requires consideration of the generational, historical, and cultural shifts that give rise to individual evaluations.

Generational context. Generational differences in attitudes generally arise from and are reflective of broad sociocultural changes that occur at specific time periods (Donnelly et al. 2016, Twenge & Kasser 2013, Twenge et al. 2016a). That is, generational differences reflect the impact of the larger cultural context on the individual. How different are the attitudes of people born into, say, the Millennial generation (born 1980–1994) from those of members of Generation X (GenXers; born 1965–1979) or Baby Boomers (born 1946–1964)? Although these types of questions have frequently been addressed through one-time polling comparisons (e.g., Nteta & Greenlee 2013), such cross-sectional comparisons across generations at a given point in time are problematic because they confound cohort, age, and historical influences.

Twenge and colleagues (e.g., Donnelly et al. 2016, Twenge & Kasser 2013, Twenge et al. 2016a) have addressed this question by carefully analyzing multiple large-scale surveys of social attitudes. For instance, in a study of political ideology using age-period-cohort analysis (Yang & Land 2013) on three large-scale and nationally representative surveys, Twenge et al. (2016b) separated the effects of the ages of the respondents from those of their cohort and historical time period. The results uncovered trends toward both greater conservatism and increased political polarization among the Millennial generation. Millennial twelfth graders and entering college students appear to be more politically polarized than Baby Boomers and GenXers were at the same age. Specifically, more twelfth graders in the 2010s identified as either strong Democrats or

strong Republicans than did those in earlier decades. At the same time, more Millennials identified as being politically conservative than did either GenXers or Baby Boomers at the same age, and a smaller proportion identified as Democrats than did Boomers.

However, ideological attitudes are not the complete story. The trend toward greater self-identification as conservatives among Millennials exists alongside their increasingly liberal and tolerant attitudes regarding religious nonbelievers, nontraditional gender roles, and same-sex marriage (for a review, see, e.g., Donnelly et al. 2016) and their decreased beliefs in God or religion (Twenge et al. 2016a). This result illustrates that attitudes toward specific issues and topics do not necessarily define or track overall party identification in a consistent way. The characteristics that define ideological attitudes are themselves dynamic and shaped by their sociocultural context—as a result, what was defined as conservative in 1970 does not necessarily correspond to what that word currently means. For instance, Millennials and GenXers have mostly continued the social trends begun by prior cohorts toward more egalitarian attitudes about gender roles, with greater support for working mothers and nonworking fathers compared to previous generations (Donnelly et al. 2016). Taken together, these results suggest that some nuance is required when summarizing generational differences in political attitudes.

Much stronger claims have been made about generational shifts in attitudes toward the self, community, work, and materialistic lifestyles. Characterizing the Millennial cohort as “Generation Me,” Twenge (2014) reviewed evidence that Millennials are more self-focused and individualistic, endorsing more favorable attitudes and values regarding money, fame, and social image while showing less community feeling than previous cohorts. Millennials are less likely than previous cohorts to report empathic concern or to take others’ perspectives, being less likely to agree that “I often have tender, concerned feelings for people less fortunate than me” or “I sometimes try to understand my friends better by imagining how things look from their perspective” (Konrath et al. 2011).

Moreover, GenXer and Millennial respondents appear to have more materialistic attitudes compared to the Boomer generation (Twenge & Kasser 2013). They also appear to have less favorable attitudes regarding the importance of work and less willingness to work hard compared to Boomers (Twenge & Kasser 2013). Specifically, in a national survey of twelfth graders, among GenXer and Millennial respondents, desires for expensive material purchases (e.g., a new car every 2–3 years, a vacation house, a recreational vehicle) have steadily increased relative to those of youth in the 1970’s. At the same time, the attitudes of twelfth graders toward the centrality of work appear to have declined, as measured by agreement with such items as, “I want to do my best in my job, even if this sometimes means working overtime.” These patterns suggest that, among younger generations, material desires may have exceeded willingness to work to fulfill them. Note, however, that the evidence for shifts in materialism may depend upon how materialism is assessed (see Trzesniewski & Donnellan 2010) and that several studies show no generational differences in work ethic endorsement (see Zabel et al. 2016).

Climatic and historical events as context. Major climatic and social occurrences of the past decade have enabled psychologists to study the effects of naturalistic events on attitudes. Studying the effects of hurricanes on political and social attitudes is a creative instance of this approach (e.g., Levy et al. 2010, Rudman et al. 2013). For instance, in Rudman et al.’s (2013) work, New Jersey residents were surveyed before and after Hurricanes Irene and Sandy to determine support for politicians who try to combat or deny climate change. Implicit attitudes toward a Green politician were negative before both hurricanes but became positive afterwards. These patterns were most pronounced for participants who had been personally affected by the hurricanes.

The impact of the 2007–2008 global financial crisis on political attitudes was investigated in a large panel study in New Zealand (Milojev et al. 2015). As was the case in most of the rest

of the world, the crisis greatly impacted New Zealand's economy, producing a 3.4% decrease in the gross domestic product and a 3-to-7% increase in unemployment. According to system justification theory (Jost & Banaji 1994), people at an economic or social disadvantage need to perceive the system as being just, a dynamic that helps to explain conservatism in underprivileged groups. Consistent with this possibility, New Zealanders of lower socioeconomic status showed an increase in political conservatism following the financial crisis. Attitudes, then, can depend not only on climatic but also on economic factors outside of the individual's control.

The impact of political events on attitudes was illustrated above when we discussed the emotional concomitants of the rally around the flag effect (Lambert et al. 2010). Other unique historical events have presented ideal opportunities to study the potent changes induced by such events. One such case involved the longstanding political and legal system of segregation in place in South Africa between 1948 and 1994. Intergroup attitudes were surveyed at various points over a 37-year period (1973–2009), allowing Mynhardt (2013) to investigate historical changes associated with these events. The ambitious study involved measures of attitudes toward English-speaking Whites, Afrikaans-speaking Whites, Indians, "coloureds," and Blacks. Notably, over the period of study, English-speaking Whites' attitudes toward their own group became less positive ($d = 0.29$), whereas the English-speaking Whites' attitudes toward Indians, Afrikaans-speaking Whites, and coloureds became more favorable. Despite these promising changes, the attitudes of English-speaking Whites toward Blacks became more negative ($d = 0.70$) during the entire period, including post-Apartheid. Furthermore, during the period of consolidation and social transformation (2000–2008), the favorability of their attitudes toward Blacks continued to plummet. The attitudes of Blacks were also interesting, showing an initial liking for English-speaking Whites and a negative turn in attitudes toward Afrikaans-speaking Whites following racial discord in the 1970s.

The impact of the presidential candidacy and election of Barack Obama, analyzed above, appears to have affected White Americans' attitudes towards Black Americans. In analyses of election surveys from 1992 to 2008, in which US representative samples of White respondents rated Blacks on scales from "stupid" to "intelligent" and from "lazy" to "hardworking," Whites' beliefs in Blacks' intelligence and work ethic became stronger and less prejudicial, although Whites continued to be perceived more positively than Blacks (Welch & Sigelman 2011). These attitudinal shifts have been described as the Obama effect and show how ethnic diversity among those who hold powerful positions can revolutionize social attitudes.

Culture as context. The sociocultural context influences attitudinal processes in a number of ways, as a rapidly growing body of research demonstrates. For instance, cultural factors can influence information processing strategies (Briley et al. 2014), shaping thinking styles (Lalwani & Shavitt 2013, Nisbett et al. 2001), general goals (Torelli & Shavitt 2010, Yang et al. 2015), and the role of feelings and metacognitive experiences in decision making (Hong & Chang 2015).

Western and non-Western cultural contexts. Most work in this area focuses on the distinctions between independent and interdependent self-construals, individualistic and collectivistic cultural backgrounds and orientations, or Western and non-Western cultural contexts. For instance, Hong & Chang (2015) showed that an independent versus interdependent self-construal (either measured or primed) strengthens the influence of incidental affect on evaluations, whereas an interdependent self-construal strengthens the reliance on reasons. Moreover, independents (interdependents) value a selected option more highly when they use a feeling-based (reason-based) strategy in choosing, presumably because the independent self seeks to enhance its own personal satisfaction whereas the interdependent self is concerned with justifying its preferences to others.

As a result of the broad influences of culture on attitude formation and change, cultural factors are often described as moderators of attitudinal processes (see Albarracín et al. 2005). Attitude scholars acknowledge cultural effects on established processes, but their influence is cast as a boundary condition. Until recently, cross-cultural theorizing has not generally been applied in an effort to expand attitudinal theorizing. However, many of the definitional and theoretical assumptions in the attitudes literature reflect primarily Western philosophical commitments. Furthermore, much of the extant knowledge about persuasion phenomena has emerged from a traditional approach to attitudes and social cognition, in which the defining feature is the focus on the individual. In this Western, person-centric model, the focus is on the development and expression of personal preferences and making one's decisions based on these preferences. This approach, as developed in the West, may offer an incomplete account of the nature and function of evaluative processes in non-Western contexts. It is worth considering the extent to which these premises apply to attitudes in non-Western cultural contexts. How do attitudes function in contexts where maintaining relationships, fulfilling expected social roles, and being normatively appropriate are often more important than forming and expressing distinct personal preferences?

Several studies have suggested that attitudes function differently in non-Western cultures. For example, Indian employees are more likely than Americans to make choices based upon what is expected by authority figures, irrespective of their own personal preferences (Savani et al. 2012). An analysis of survey data tapping concern for the environment from 48 countries (Eom et al. 2016) showed that, for nations that are less individualistic, personal attitudes are less predictive of environmental behavior intentions. A follow-up experiment showed that, although environmental attitudes are a strong predictor of pro-environmental product choices in the United States, they are not in Japan, where, instead social norms predict choices (Eom et al. 2016).

Most attitude theories assume, for instance, that personal preferences and choices rooted in those preferences are foundational and are, therefore, the key to achieving persuasion outcomes. However, in non-Western contexts, where a normative-contextual model applies (Riemer et al. 2014), normative pressures, structured through cultural practices, shape attitudes. Parents direct their children's attention to normative aspects of events ("What were the children doing?") rather than to their own personal emotional responses ("Did you like it?") (Wang 2013), and other societal structures reinforce the emphasis on norms and relationships (Markus & Conner 2013).

In other words, in many cultures, the emphasis is on awareness of social expectations, norms, and obligations and integration of these factors into one's preferences (e.g., Gelfand et al. 2011, Li et al. 2017, Miller et al. 2011). Chiu et al. (2010) point out that, in such contexts, intersubjective perceptions (people's perceptions of the normative consensus) can better explain choices than can personal beliefs and values. Rather than holding unique personal preferences that set the self apart, individuals hold attitudes that help them to conform and to validate shared social norms (Boer & Fischer 2013), serving to affirm and deepen relationships with others. Moreover, Easterners, as compared to Westerners, tend to have a more difficult time choosing at all, and this indecisiveness is tied to dialectical thinking (Ng & Hynie 2014), a belief system that tolerates contradictory information (Spencer-Rodgers et al. 2010) and emphasizes interconnections and holistic relationships. In contrast, Westerners prefer action, and their intolerance of contradiction leads to oppositional attitudes toward the concepts of action and inaction, which appear contradictory, whereas people from dialectical East Asian societies express more balanced and moderate views about action and inaction (Zell et al. 2012a) and other targets (see Johnson et al. 2011). Indeed, in Western contexts, having stable and internally consistent attitudes is fundamentally important to guiding action, and ambivalent attitudes are, therefore, undesirable (Riemer et al. 2014). As a result, among Westerners, having ambivalent attitudes is aversive, and such attitudes

Person-centric model: traditional Western view of attitudes, defined by a focus on the individual and the development and expression of personal preferences

Individualism:

cultural value system emphasizing the importance of self-reliance and independence and the pursuit of personal goals over the ingroup's goals

Collectivism:

cultural value system emphasizing pursuit of group goals, harmony, interdependence with others, and maintenance of strong relationships

are more likely than univalent attitudes to change, whereas this is not the case among Easterners (Ng et al. 2012).

East Asian philosophy emphasizes the idea that everything needs to be evaluated in its context (Nisbett et al. 2001). This principle leads to an enhanced tendency to see interconnections between elements of a larger whole, for instance, between a parent brand (e.g., McDonald's) and a new brand extension launched by the brand that is not an obvious fit (e.g., McDonald's salads). Holistic (versus analytic) thinkers can be more favorable toward distant brand extensions for functional products because they are more likely to find symbolic relationships among such products (Monga & John 2010). Similarly, whereas consumers in general tend to judge a product's quality based on its price, having a holistic thinking style strengthens this perceived price–quality relationship (Lalwani & Shavitt 2013). Specifically, consumers who adopt a holistic rather than an analytic thinking style are more likely to use a product's price to evaluate its quality because of their tendency to see interrelations between price and other product elements (Lalwani & Shavitt 2013).

Research points to differences in the functions of attitudes, as well. In Western contexts, personal attitudes often serve a self-expressive function, as preferences are strategically formed and expressed to convey desired individual identities (e.g., Berger 2014). In contrast, in non-Western contexts, harmony and social cohesion are more persuasive (e.g., Han & Shavitt 1994), and attitudes function to enhance relational embeddedness (Riemer et al. 2014) and to express values of conformity and tradition that support social norms (Boer & Fischer 2013). In such contexts, self-expression, as an assertion of individuality, is less motivating, and self-expressive acts are less prevalent (e.g., Chu & Kim 2011, Kim & Sherman 2007). In line with this pattern, an analysis of online customer reviews posted in China (on <https://www.amazon.cn>) and the United States (on <https://www.amazon.com>) revealed that Chinese reviews were less self-expressive than American reviews in that they were less likely to provide their personal opinions about products and contained fewer recommendations to others (Lai et al. 2013).

Taken together, then, a growing body of research suggests cultural differences in the structure, functions, and characteristics of attitudes. Traditional attitude theorizing has tended to view attitudes as intrapersonal entities tuned to the pursuit of individual goals—a person-centric model. There are significant opportunities to broaden attitude theorizing to address the distinct normative–contextual aspects of attitudes in non-Western cultures (Riemer et al. 2014).

Horizontal and vertical cultural contexts. In addition to the broad distinction between individualistic, independent cultures and collectivistic, interdependent ones, recent research has also addressed the influence of other important dimensions of culture on attitudes and persuasion processes (for a review, see Shavitt et al. 2017). For instance, cultures vary in their propensity to emphasize hierarchy, a distinction within the individualism–collectivism continuum that is captured by cultures or orientations that are horizontal (valuing equality) versus vertical (emphasizing hierarchy; Triandis & Gelfand 1998). In vertical-individualist societies, such as the United States and Great Britain, an individualistic form of hierarchy, where gaining personal status is linked to the individual self and people seek opportunities to stand out and to impress others, is emphasized. In contrast, in horizontal-individualist societies, such as Denmark, Norway, and Australia, the focus is on expressing uniqueness, self-reliance, and self-expression rather than improving personal status. In vertical-collectivist societies, such as South Korea, China, and India, the emphasis is on fulfilling duties, prioritizing ingroup goals over personal goals, and complying with authority figures. Finally, in horizontal-collectivist societies, such as Brazil and some other Latin American contexts, the emphasis is on interdependence, benevolence, and sociability, not hierarchy (Torelli & Shavitt 2010; for a review, see Shavitt & Cho 2016). Differences in orientation along the

horizontal–vertical continuum have also been shown within countries among ethnic and cultural groups. For instance, Hispanic Americans tend to score higher than European Americans in horizontal collectivism and lower in vertical individualism (Torelli & Shavitt 2010, Torelli et al. 2015).

This horizontal versus vertical cultural distinction is reflected in the content of persuasive appeals and in attitudinal patterns. For instance, an analysis of the content of over 1,200 magazine advertisements in five countries (Denmark, South Korea, Poland, Russia, and the United States) revealed that advertisements in vertical cultures (e.g., the United States and South Korea) put more emphasis on status, luxury, and prestige than do ads in horizontal cultures (e.g., Denmark) (Shavitt et al. 2011). For example, in vertical cultures, advertisements are more likely to use prestigious endorsers identified as Ivy League graduates or to label brands as “award-winning.” On the other hand, uniqueness appeals are more prevalent in horizontal individualist cultures (e.g., Denmark) than in countries that fall into vertical cultural categories. For instance, such advertisements may highlight how the advertised brand expresses consumers’ personal style.

Similarly, consumers tend to prefer brands and advertisements that resonate with these horizontal and vertical cultural orientations (Torelli & Shavitt 2010, Torelli et al. 2012). For example, having a horizontal collectivistic orientation predicts liking a brand that conveys self-transcendence values in its advertising (e.g., “Supporting humanitarian programs in developing countries because we care about building a better world.”) and predicts an affinity for brands that embody concerns for the welfare of others. Having a vertical collectivistic orientation predicts liking a brand that conveys conservation values (e.g., “The status quo in luxury watches. A tradition of classic designs and impeccable workmanship for 115 years.”). Having a vertical individualistic orientation predicts liking brands that symbolize status and prestige and advertisements that convey self-enhancement (e.g., “An exceptional piece of adornment that conveys your status and signifies your exquisite taste.”), whereas having a horizontal individualistic orientation predicts liking a brand that conveys openness (e.g., “A travel companion to help you live an exciting life full of adventures waiting around every corner.”) (Torelli & Shavitt 2010, Torelli et al. 2012). Moreover, these relations emerge across cultural groups. For example, Brazilians, who score relatively high in horizontal collectivistic orientation (compared to European Americans, Canadians, and East Asians), tend to prefer brands that symbolize prosocial values more than do individuals in other cultural groups. Norwegians, who score relatively low in vertical individualistic orientation, tend to prefer brands that symbolize status and prestige values less than do individuals in the other groups. A multi-level analysis further indicated that vertical individualistic and horizontal collectivistic cultural orientations partially mediate cultural group–level differences in liking for these respective types of brands (Torelli & Shavitt 2010, study 3). Evidence also suggests that distinct mindsets can be triggered when concepts relevant to each cultural orientation are cued, influencing the processing of information about an object (Torelli & Shavitt 2010).

CONCLUSION

Our review highlights the sizeable and long-standing research interest in attitudes and attitude change. Research between 2010 and 2017 has elucidated many details regarding the cognitive and motivational processes of attitude formation, attitude change, and attitude–behavior correspondence. That said, this period of attitude research has been characterized by significant shifts. Our focus on contextual factors in this review encapsulates a key qualitative change in recent years in the scientific research agenda on attitudes—a shift from a focus on microprocesses to a more holistic, contemporary understanding of attitudes as they exist in three fundamental contexts: the person as a whole, the social context, and the broad sociohistorical context. This contextual focus on the

person as a whole links attitude change to individual values, general goals, language, emotions, and developmental and life span influences. The focus on the social context links attitude change to the individual's interactions with communicators, social networks, and social media. The focus on the broad sociohistorical context recognizes the impact of historically significant climatic, political, and economic events, as well as the fundamental impact of culture on the characteristics and functions of attitudes.

For decades, particularly during the 1980s and 1990s, research on attitude change was primarily focused on information processing—a label applying a computer processing metaphor, assumed to operate across situations and topics. The period of research covered in the previous *Annual Review of Psychology* article on attitudes and attitude change was characterized as one of integrative theorizing (Bhoner & Dickel 2011), as efforts to integrate cognitive process models and explicit and implicit attitudes were a primary concern. In the current period (2010–2017), a new contextualism has added nuance to our understanding of attitudes, bringing with it more attention to the substantive content of attitudes. Rather than seeking integration, this approach offers an enhanced understanding of distinctions between attitudinal domains. After years of leaving attitude objects out of the conversation, attitude change research now increasingly concerns itself with shifts in specific attitude clusters (e.g., attitudes toward political issues, music, jobs and work, community, climate change, materialistic goals, status brands, authority figures, and even the concepts of action or inaction) and what these shifts reveal about the contexts in which these attitudes were formed. As future research continues to mine the influence of the personal, social, and sociohistorical contexts, we look forward to a more situated understanding of attitude formation and change.

SUMMARY POINTS

1. The degree of attitude change generally observed in published research tends to be modest, at about one third of a standard deviation.
2. Linking a specific advocacy to broad values can shape attitudes toward a policy in line with the values. Values influence behavior by mediating influences on attitudes more specifically connected to the behavior.
3. Attitudes are easier to remember and more difficult to change when action goals are activated.
4. Second-person self-talk can induce positive attitudes toward a task.
5. Emotional regulation can reduce negative attitudes.
6. Developmental shifts are observable in attitudes toward many topic areas, from music and media to the self. The roots of political and materialistic ideologies can be traced to early childhood experiences.
7. The attitudes of the Millennial generation differ from those of prior generations in being more conservative fiscally and politically, liberal socially (e.g., support for egalitarian gender roles and same-sex marriage), individualistic, self-focused, and materialistic.
8. Attitude theorizing, as developed in the West, offers an incomplete account of how attitudes function and are structured in non-Western cultures, where normative processes play a stronger role in shaping attitudes and their functions.

FUTURE ISSUES

1. It is important to maintain a common terminology to facilitate tracking attitude research. Currently, some of the work on attitudes uses terms such as “evaluative judgments” or “values” instead of “attitudes.”
2. We are only beginning to understand patterns of delayed attitude change, and these patterns deserve future attention.
3. Attitudes must be studied within social networks and in relation to historic and other environmental events.
4. Attitude change strategies must be systematically tested across cultures.
5. Analyses of generational or developmental influences on attitudes must disentangle the influences of age, historical time period, and cohort.
6. To expand attitude theorizing across cultural regions, the distinct characteristics and functions of attitudes in non-Western cultures deserve attention.
7. Although most attitude research is properly statistically powered, some areas are not and require increased methodological rigor.
8. Psychological research on attitudes would benefit from greater attention to public policy considerations and applied issues.

DISCLOSURE STATEMENT

The authors are not aware of any affiliations, memberships, funding, or financial holdings that might be perceived as affecting the objectivity of this review.

LITERATURE CITED

- Ajzen I, Madden TJ. 1986. Prediction of goal-directed behavior: attitudes, intentions, and perceived behavioral control. *J. Exp. Soc. Psychol.* 22(5):453–74
- Albarracín D, Handley IM. 2011. The time for doing is not the time for change: effects of general action and inaction goals on attitude retrieval and attitude change. *J. Personal. Soc. Psychol.* 100(6):983–98
- Albarracín D, Handley IM, Noguchi K, McCulloch KC, Li H, et al. 2008. Increasing and decreasing motor and cognitive output: a model of general action and inaction goals. *J. Personal. Soc. Psychol.* 95(3):510–23
- Albarracín D, Kumkale GT, Del Vento PP. 2017. How people can become persuaded by weak messages presented by credible communicators: Not all sleeper effects are created equal. *J. Exp. Soc. Psychol.* 68:171–80
- Albarracín D, Zanna MP, Johnson BT, Kumkale GT. 2005. Attitudes: introduction and scope. In *The Handbook of Attitudes*, ed. D Albarracín, BT Johnson, MP Zanna, pp. 3–19. Hove, UK: Psychol. Press
- Allport GW. 1935. Attitudes. In *A Handbook of Social Psychology*, ed. C Murchison, pp. 798–844. Worcester, MA: Clark Univ. Press
- Barden J, Tormala ZL. 2014. Elaboration and attitude strength: the new meta-cognitive perspective. *Soc. Personal. Psychol. Compass* 8(1):17–29
- Berger J. 2014. Word of mouth and interpersonal communication: a review and directions for future research. *J. Consum. Psychol.* 24(4):586–607
- Blankenship KL, Wegener DT, Murray RA. 2012. Circumventing resistance: using values to indirectly change attitudes. *J. Personal. Soc. Psychol.* 103(4):606–21

- Blankenship KL, Wegener DT, Murray RA. 2015. Values, inter-attitudinal structure, and attitude change: Value accessibility can increase a related attitude's resistance to change. *Personal. Soc. Psychol. Bull.* 41(12):1739–50
- Boer D, Fischer R. 2013. How and when do personal values guide our attitudes and sociality? Explaining cross-cultural variability in attitude-value linkages. *Psychol. Bull.* 139(5):1113–47
- Bohner G, Dickel N. 2011. Attitudes and attitude change. *Annu. Rev. Psychol.* 62:391–417
- Bonneville-Roussy A, Rentfrow PJ, Xu MK, Potter J. 2013. Music through the ages: trends in musical engagement and preferences from adolescence through middle adulthood. *J. Personal. Soc. Psychol.* 105(4):703–17
- Briley D, Wyer RS, Li E. 2014. A dynamic view of cultural influence: a review. *J. Consum. Psychol.* 24(4):557–71
- Calanchini J, Sherman JW. 2013. Implicit attitudes reflect associative, non-associative, and non-attitudinal processes. *Soc. Personal. Psychol. Compass* 7(9):654–67
- Cameron CD, Brown-Iannuzzi JL, Payne BK. 2012. Sequential priming measures of implicit social cognition: a meta-analysis of associations with behavior and explicit attitudes. *Personal. Soc. Psychol. Rev.* 16(4):330–50
- Carrera P, Muñoz D, Caballero A, Fernández I, Albarracín D. 2012. The present projects past behavior into the future while the past projects attitudes into the future: how verb tense moderates predictors of drinking intentions. *J. Exp. Soc. Psychol.* 48(5):1196–200
- Carstensen LL. 2006. The influence of a sense of time on human development. *Science* 312:1913–16
- Chan MS, Jones CR, Albarracín D. 2017. Countering false beliefs: an analysis of the evidence and recommendations of best practices for the retraction and correction of scientific misinformation. In *The Oxford Handbook of the Science of Science Communication*, ed. KH Jamieson, D Kahan, DA Scheufele, pp. 331–39. Oxford, UK: Oxford Univ. Press
- Chaplin LN, John DR. 2010. Interpersonal influences on adolescent materialism: a new look at the role of parents and peers. *J. Consum. Psychol.* 20(2):176–84
- Chiu C-Y, Gelfand MJ, Yamagishi T, Shteynberg G, Wan C. 2010. Intersubjective culture: the role of intersubjective perceptions in cross-cultural research. *Perspect. Psychol. Sci.* 5(4):482–93
- Chu SC, Kim Y. 2011. Determinants of consumer engagement in electronic word-of-mouth (eWOM) in social networking sites. *Int. J. Advert.* 30(1):47–75
- Clark JK, Evans AT. 2014. Source credibility and persuasion: the role of message position in self-validation. *Personal. Soc. Psychol. Bull.* 40(8):1024–36
- Clark JK, Wegener DT, Sawicki V, Petty RE, Briñol P. 2013. Evaluating the message or the messenger? Implications for self-validation in persuasion. *Personal. Soc. Psychol. Bull.* 39(12):1571–84
- Clore GL, Schnall S. 2005. The influence of affect on attitude. In *The Handbook of Attitudes*, ed. D Albarracín, BT Johnson, MP Zanna, pp. 437–90. Hove, UK: Psychol. Press
- de Klepper M, Sleebos E, van de Bunt G, Agneessens F. 2010. Similarity in friendship networks: selection or influence? The effect of constraining contexts and non-visible individual attributes. *Soc. Netw.* 32(1):82–90
- Dolcos S, Albarracín D. 2014. The inner speech of behavioral regulation: intentions and task performance strengthen when you talk to yourself as a You. *Eur. J. Soc. Psychol.* 44(6):636–42
- Donnelly K, Twenge JM, Clark MA, Shaikh SK, Beiler-May A, Carter NT. 2016. Attitudes toward women's work and family roles in the United States, 1976–2013. *Psychol. Women Q.* 40(1):361684315590774
- Dubois D, Rucker DD, Galinsky AD. 2016. Dynamics of communicator and audience power: the persuasiveness of competence versus warmth. *J. Consum. Res.* 43(1):68–85
- Ecker UKH, Lewandowsky S, Fenton O, Martin K. 2014. Do people keep believing because they want to? Preexisting attitudes and the continued influence of misinformation. *Mem. Cogn.* 42(2):292–304
- Effron DA, Miller DT. 2012. How the moralization of issues grants social legitimacy to act on one's attitudes. *Personal. Soc. Psychol. Bull.* 38(5):690–701
- Ehret PJ, Monroe BM, Read SJ. 2015. Modeling the dynamics of evaluation: a multilevel neural network implementation of the iterative reprocessing model. *Personal. Soc. Psychol. Rev.* 19(2):148–76
- Eom K, Kim HS, Sherman DK, Ishii K. 2016. Cultural variability in the link between environmental concern and support for environmental action. *Psychol. Sci.* 27(10):1–9
- Eschleman KJ, Bowling NA, Judge TA. 2015. The dispositional basis of attitudes: a replication and extension of Hepler and Albarracín 2013. *J. Personal. Soc. Psychol.* 108(5):e1–15
- Feinberg M, Willer R. 2013. The moral roots of environmental attitudes. *Psychol. Sci.* 24(1):56–62

- Feldman G, Albarracín D. 2016. Norm theory and the action-effect: the role of social norms in regret following action and inaction. *J. Exp. Soc. Psychol.* 69:111–20
- Fraley RC, Griffin BN, Belsky J, Roisman GI. 2012. Developmental antecedents of political ideology: a longitudinal investigation from birth to age 18 years. *Psychol. Sci.* 23(11):1425–31
- Galdi S, Gawronski B, Arcuri L, Friese M. 2012. Selective exposure in decided and undecided individuals. *Personal. Soc. Psychol. Bull.* 38(5):559–69
- Garnett BR, Buelow R, Franko DL, Becker C, Rodgers RF, Austin SB. 2014. The importance of campaign saliency as a predictor of attitude and behavior change: a pilot evaluation of social marketing campaign Fat Talk Free Week. *Health Commun.* 29(10):984–95
- Gelfand MJ, Raver JL, Nishii L, Leslie LM, Lun J, et al. 2011. Differences between tight and loose cultures: a 33-nation study. *Science* 332(6033):1100–4
- Greenwald AG, Banaji MR, Nosek BA. 2015. Statistically small effects of the implicit association test can have societally large effects. *J. Personal. Soc. Psychol.* 108(4):553–61
- Greenwald AG, Poehlman TA, Uhlmann EL, Banaji MR. 2009. Understanding and using the implicit association test: III. Meta-analysis of predictive validity. *J. Personal. Soc. Psychol.* 97(1):17–41
- Halperin E, Porat R, Tamir M, Gross JJ. 2013. Can emotion regulation change political attitudes in intractable conflicts? From the laboratory to the field. *Psychol. Sci.* 24(1):106–11
- Han S-P, Shavitt S. 1994. Persuasion and culture: advertising appeals in individualistic and collectivistic societies. *J. Exp. Soc. Psychol.* 30(4):326–50
- Hart W, Albarracín D, Eagly AH, Brechan I, Lindberg MJ, Merrill L. 2009. Feeling validated versus being correct: a meta-analysis of selective exposure to information. *Psychol. Bull.* 135(4):555–88
- Hepler J, Albarracín D. 2013. Attitudes without objects: evidence for a dispositional attitude, its measurement, and its consequences. *J. Personal. Soc. Psychol.* 104(6):1060–76
- Hepler J, Albarracín D. 2014. Liking more means doing more: Dispositional attitudes predict patterns of general action. *Soc. Psychol.* 45(5):391–98
- Hong J, Chang HH. 2015. “I” follow my heart and “we” rely on reasons: the impact of self-construal on reliance on feelings versus reasons in decision making. *J. Consum. Res.* 41(April):1392–411
- Howe LC, Krosnick JA. 2017. Attitude strength. *Annu. Rev. Psychol.* 68:327–51
- Hunt CV, Kim A, Borgida E, Chaiken S. 2010. Revisiting the self-interest versus values debate: the role of temporal perspective. *J. Exp. Soc. Psychol.* 46(6):1155–58
- Jamieson KH, Hardy BW. 2014. Leveraging scientific credibility about Arctic sea ice trends in a polarized political environment. *PNAS* 111(Suppl.):13598–605
- Jia L, Smith ER. 2013. Distance makes the metaphor grow stronger: a psychological distance model of metaphor use. *J. Exp. Soc. Psychol.* 49(3):492–97
- Johnson TP, Shavitt S, Holbrook AL. 2011. Survey response styles across cultures. In *Cross-Cultural Research Methods in Psychology*, ed. D Matsumoto, F van de Vijver, pp. 130–75. Oxford, UK: Oxford Univ. Press
- Jost JT, Banaji MR. 1994. The role of stereotyping in system-justification and the production of false consciousness. *Br. J. Soc. Psychol.* 33(1):1–27
- Jung CG. 1923. *Psychological Types, or the Psychology of Individuation*. Zürich: Rascher Verl.
- Kalinoski ZT, Steele-Johnson D, Peyton EJ, Leas KA, Steinke J, Bowling NA. 2013. A meta-analytic evaluation of diversity training outcomes. *J. Organ. Behav.* 34(8):1076–104
- Kim HS, Sherman DK. 2007. “Express yourself”: culture and the effect of self-expression on choice. *J. Personal. Soc. Psychol.* 92(1):1–11
- Konrath SH, O’Brien EH, Hsing C. 2011. Changes in dispositional empathy in American college students over time: a meta-analysis. *Personal. Soc. Psychol. Rev.* 15(2):180–98
- Kross E, Bruehlman-Senecal E, Park J, Burson A, Dougherty A, et al. 2014. Self-talk as a regulatory mechanism: How you do it matters. *J. Personal. Soc. Psychol.* 106(2):304–24
- Kruglanski AW, Gigerenzer G. 2011. Intuitive and deliberate judgments are based on common principles. *Psychol. Rev.* 118(1):97–109
- Kumkale GT, Albarracín D. 2004. The sleeper effect in persuasion: a meta-analytic review. *Psychol. Bull.* 130(1):143–72
- Lai J, He P, Chou H-M, Zhou L. 2013. Impact of national culture on online consumer review behavior. *Glob. J. Bus. Res.* 7(1):109–15

- Lalwani AK, Shavitt S. 2013. You get what you pay for? Self-construal influences price-quality judgments. *J. Consum. Res.* 40(2):255–67
- Lambert AJ, Scherer LD, Schott JP, Olson KR, Andrews RK, et al. 2010. Rally effects, threat, and attitude change: an integrative approach to understanding the role of emotion. *J. Personal. Soc. Psychol.* 98(6):886–903
- Ledgerwood A, Trope Y, Chaiken S. 2010. Flexibility now, consistency later: Psychological distance and construal shape evaluative responding. *J. Personal. Soc. Psychol.* 99(1):32–51
- Lehmer G, Wagner U. 2015. Can we really reduce ethnic prejudice outside the lab? A meta-analysis of direct and indirect contact interventions. *Eur. J. Soc. Psychol.* 45(2):152–68
- Levy SR, Freitas AL, Mendoza-Denton R, Kugelmass H, Rosenthal L. 2010. When sociopolitical events strike cultural beliefs: divergent impact of Hurricane Katrina on African Americans' and European Americans' endorsement of the Protestant work ethic. *Basic Appl. Soc. Psychol.* 32(3):207–16
- Li R, Gordon S, Gelfand MJ. 2017. Tightness-looseness: a new framework to understand consumer behavior. *J. Consum. Psychol.* 27(3):377–91
- Liberman N, Trope Y. 1998. The role of feasibility and desirability considerations in near and distant future decisions: a test of temporal construal theory. *J. Personal. Soc. Psychol.* 75(1):5–18
- Mares ML, Sun Y. 2010. The multiple meanings of age for television content preferences. *Hum. Commun. Res.* 36(3):372–96
- Markus HR, Conner A. 2013. *Clash!: How to Thrive in a Multicultural World*. New York: Plume
- McCulloch KC, Li H, Hong S, Albarracín D. 2012. Naïve definitions of action and inaction: the continuum, spread, and valence of behaviors. *Eur. J. Soc. Psychol.* 42(2):227–34
- Meissner F, Rothermund K. 2013. Estimating the contributions of associations and recoding in the implicit association test: the ReAL model for the IAT. *J. Personal. Soc. Psychol.* 104(1):45–69
- Mercier H. 2016. The argumentative theory: predictions and empirical evidence. *Trends Cogn. Sci.* 20(9):689–700
- Mercier H, Sperber D. 2011. Why do humans reason? Arguments for an argumentative theory. *Behav. Brain Sci.* 34(2):57–111
- Miche M, Elsässer VC, Schilling OK, Wahl H-W. 2014. Attitude toward own aging in midlife and early old age over a 12-year period: examination of measurement equivalence and developmental trajectories. *Psychol. Aging* 29(3):588–600
- Mikels JA, Shuster MM, Thai ST, Smith-Ray R, Waugh CE, et al. 2016. Messages that matter: age differences in affective responses to framed health messages. *Psychol. Aging* 31(4):409–14
- Miles E, Crisp RJ. 2014. A meta-analytic test of the imagined contact hypothesis. *Group Process. Intergroup Relat.* 17(1):3–26
- Milfont TL, Duckitt J, Wagner C. 2010. A cross-cultural test of the value-attitude-behavior hierarchy. *J. Appl. Soc. Psychol.* 40(11):2791–813
- Miller DT, Efron DA. 2010. Psychological license: when it is needed and how it functions. *Adv. Exp. Soc. Psychol.* 43(C):115–55
- Miller JG, Das R, Chakravarthy S. 2011. Culture and the role of choice in agency. *J. Personal. Soc. Psychol.* 101(1):46–61
- Milojev P, Greaves L, Osborne D, Sibley CG. 2015. Stability and change in political conservatism following the global financial crisis. *Personal. Soc. Psychol. Bull.* 41(1):127–39
- Monga AB, John DR. 2010. What makes brands elastic? The influence of brand concept and styles of thinking on brand extension evaluation. *J. Mark.* 74(3):80–92
- Mynhardt JC. 2013. Intergroup attitude change in South Africa: a thirty-seven year longitudinal study. *J. Psychol. Afr.* 23(4):549–60
- Ng AH, Hynie M. 2014. Cultural differences in indecisiveness: the role of naïve dialecticism. *Personal. Individ. Differ.* 70:45–50
- Ng AH, Hynie M, MacDonald TK. 2012. Culture moderates the pliability of ambivalent attitudes. *J. Cross-Cult. Psychol.* 43(8):1313–24
- Ng T, Feldman D. 2010. The relationships of age with job attitudes: a meta-analysis. *Pers. Psychol.* 63(3):677–718

- Nisbett RE, Peng K, Choi I, Norenzayan A. 2001. Culture and systems of thought: holistic versus analytic cognition. *Psychol. Rev.* 108(2):291–310
- Notthoff N, Carstensen LL. 2014. Positive messaging promotes walking in older adults. *Psychol. Aging* 29(2):329–41
- Nteta TM, Greenlee JS. 2013. A change is gonna come: generational membership and White racial attitudes in the 21st century. *Polit. Psychol.* 34(6):877–97
- Orth U, Robins RW, Widaman KF. 2012. Life-span development of self-esteem and its effects on important life outcomes. *J. Personal. Soc. Psychol.* 102(6):1271–88
- Orth U, Trzesniewski KH, Robins RW. 2010. Self-esteem development from young adulthood to old age: a cohort-sequential longitudinal study. *J. Personal. Soc. Psychol.* 98(4):645–58
- Oswald FL, Mitchell G, Blanton H, Jaccard J, Tetlock PE. 2015. Using the IAT to predict ethnic and racial discrimination: small effect sizes of unknown societal significance. *J. Personal. Soc. Psychol.* 108(4):562–71
- Oyamot CM, Fisher EL, Deason G, Borgida E. 2012. Attitudes toward immigrants: the interactive role of the authoritarian predisposition, social norms, and humanitarian values. *J. Exp. Soc. Psychol.* 48(1):97–105
- Park LE, Young AF, Troisi JD, Pinkus RT. 2011. Effects of everyday romantic goal pursuit on women's attitudes toward math and science. *Personal. Soc. Psychol. Bull.* 37(9):1259–73
- Pierro A, Mannetti L, Kruglanski AW, Klein K, Orehek E. 2012. Persistence of attitude change and attitude-behavior correspondence based on extensive processing of source information. *Eur. J. Soc. Psychol.* 42(1):103–11
- Pietri ES, Fazio RH, Shook NJ. 2013. Weighting positive versus negative: the fundamental nature of valence asymmetry. *J. Personal.* 81(2):196–208
- Pillaud V, Cavazza N, Butera F. 2013. The social value of being ambivalent: self-presentational concerns in the expression of attitudinal ambivalence. *Personal. Soc. Psychol. Bull.* 39(9):1139–51
- Ranney MA, Clark D. 2016. Climate change conceptual change: Scientific information can transform attitudes. *Top. Cogn. Sci.* 8(1):49–75
- Reed AE, Chan L, Mikels JA. 2014. Meta-analysis of the age-related positivity effect: age differences in preferences for positive over negative information. *Psychol. Aging* 29(1):1–15
- Rentfrow PJ, Goldberg LR, Levitin DJ. 2011. The structure of musical preferences: a five-factor model. *J. Personal. Soc. Psychol.* 100(6):1139–57
- Riemer H, Shavitt S, Koo M, Markus HR. 2014. Preferences don't have to be personal: expanding attitude theorizing with a cross-cultural perspective. *Psychol. Rev.* 121(4):619–48
- Rocklage MD, Fazio RH. 2014. Individual differences in valence weighting: when, how, and why they matter. *J. Exp. Soc. Psychol.* 50(1):144–57
- Roos LE, Lebrecht S, Tanaka JW, Tarr MJ. 2013. Can singular examples change implicit attitudes in the real-world? *Front. Psychol.* 4(Sept.):1–14
- Rudman LA, McLean MC, Bunzl M. 2013. When truth is personally inconvenient, attitudes change: the impact of extreme weather on implicit support for Green politicians and explicit climate-change beliefs. *Psychol. Sci.* 24(11):2290–96
- Savani K, Morris MW, Naidu NVR. 2012. Deference in Indians' decision making: introjected goals or injunctive norms? *J. Personal. Soc. Psychol.* 102(4):685–99
- Schuldt JP, Konrath SH, Schwarz N. 2011. "Global warming" or "climate change"? *Public Opin. Q.* 75(1):115–24
- Schwartz SH, Cieciuch J, Vecchione M, Davidov E, Fischer R, et al. 2012. Refining the theory of basic individual values. *J. Personal. Soc. Psychol.* 103(4):663–88
- Shavitt S, Cho H. 2016. Culture and consumer behavior: the role of horizontal and vertical cultural factors. *Curr. Opin. Psychol.* 8:149–54
- Shavitt S, Cho H, Barnes A. 2017. Culture and Consumer Behavior. In *Handbook of Cultural Psychology*, ed. S Kitayama, D Cohen. New York: Guilford Press. 2nd ed. In press
- Shavitt S, Johnson TP, Zhang J. 2011. Horizontal and vertical cultural differences in the content of advertising appeals. *J. Int. Consum. Mark.* 23:297–310
- Sheets P, Domke DS, Greenwald AG. 2011. God and country: the partisan psychology of the presidency, religion, and nation. *Polit. Psychol.* 32(3):459–84

- Simmons JP, Nelson LD, Simonsohn U. 2011. False-positive psychology: Undisclosed flexibility in data collection and analysis allows presenting anything as significant. *Psychol. Sci.* 22(11):1359–66
- Spencer-Rodgers J, Williams MJ, Peng K. 2010. Cultural differences in expectations of change and tolerance for contradiction: a decade of empirical research. *Personal. Soc. Psychol. Rev.* 14(3):296–312
- Stanley DA, Sokol-Hessner P, Banaji MR, Phelps EA. 2011. Implicit race attitudes predict trustworthiness judgments and economic trust decisions. *PNAS* 108(19):7710–15
- Steinmetz H, Knappstein M, Ajzen I, Schmidt P, Kabst R. 2016. How effective are behavior change interventions based on the theory of planned behavior? A three-level meta-analysis. *Z. Psychol.* 224(3):216–233
- Stout JG, Dasgupta N, Hunsinger M, McManus MA. 2011. STEMing the tide: using ingroup experts to inculcate women’s self-concept in science, technology, engineering, and mathematics (STEM). *J. Personal. Soc. Psychol.* 100(2):255–70
- Struthers A, Wang M. 2016. Buzz agents in a teen-driven social marketing campaign: Positive campaign attitude leads to positive changes in health outcomes. *Soc. Mark. Q.* 22(3):218–35
- Tannenbaum MB, Hepler J, Zimmerman RS, Saul L, Jacobs S, et al. 2015. Appealing to fear: a meta-analysis of fear appeal effectiveness and theories. *Psychiatr. Bull.* 141(6):1178–204
- Thibodeau PH, Crow L, Flusberg SJ. 2017. The metaphor police: a case study of the role of metaphor in explanation. *Psychon. Bull. Rev.* 24(5):1375–86
- Thomas WI, Znaniecki F. 1918–1920. *The Polish Peasant in Europe and America*. Boston: Gorham Press
- Torelli CJ, Özsoymer A, Carvalho SW, Keh HT, Maehle N. 2012. Brand concepts as representations of human values: Do cultural congruity and compatibility between values matter? *J. Mark.* 76(July):92–108
- Torelli CJ, Shavitt S. 2010. Culture and concepts of power. *J. Personal. Soc. Psychol.* 99(4):703–23
- Torelli CJ, Shavitt S, Cho YI, Holbrook AL, Johnson TP, Weiner S. 2015. Justice or compassion? Cultural differences in power norms affect consumer satisfaction with power-holders. *Int. Mark. Rev.* 324(3):279–306
- Triandis HC, Gelfand MJ. 1998. Converging measurement of horizontal and vertical individualism and collectivism. *J. Personal. Soc. Psychol.* 74(1):118–28
- Trzesniewski KH, Donnellan MB. 2010. Rethinking “Generation Me”: a study of cohort effects from 1976–2006. *Perspect. Psychol. Sci.* 5(1):58–75
- Twenge JM. 2014. *Generation Me—Revised and Updated: Why Today’s Young Americans Are More Confident, Assertive, Entitled—and More Miserable than Ever Before*. New York: Atria Books
- Twenge JM, Honeycutt N, Prislun R, Sherman RA. 2016a. More polarized but more independent: political party identification and ideological self-categorization among US adults, college students, and late adolescents, 1970–2015. *Personal. Soc. Psychol. Bull.* 42(10):1364–83
- Twenge JM, Kasser T. 2013. Generational changes in materialism and work centrality, 1976–2007: associations with temporal changes in societal insecurity and materialistic role modeling. *Personal. Soc. Psychol. Bull.* 39(7):883–97
- Twenge JM, Sherman RA, Exline JJ, Grubbs JB. 2016b. Declines in American adults’ religious participation and beliefs, 1972–2014. *SAGE Open* 6(1):2158244016638133
- Tyson M, Covey J, Rosenthal HES. 2014. Theory of planned behavior interventions for reducing heterosexual risk behaviors: a meta-analysis. *Health Psychol.* 33(12):1454–67
- Valkenburg PM, Peter J, Walther JB. 2016. Media effects: theory and research. *Annu. Rev. Psychol.* 67(1):315–38
- van Bavel JJ, Xiao YJ, Cunningham WA. 2012. Evaluation is a dynamic process: moving beyond dual system models. *Soc. Personal. Psychol. Compass.* 6:438–54
- von Salisch M, Vogelgesang J, Kristen A, Oppl C. 2011. Preference for violent electronic games and aggressive behavior among children: the beginning of the downward spiral? *Media Psychol.* 14(3):233–58
- Wakslak C, Liberman N, Trope Y. 2007. Construal levels and psychological distance: effects on representation, prediction, evaluation, and behavior. *J. Consum. Psychol.* 17(2):83–95
- Wang Q. 2013. Chinese socialization and emotion talk between mothers and children in native and immigrant Chinese families. *Asian Am. J. Psychol.* 4(3):185–92
- Weaver JR, Bosson JK. 2011. I feel like I know you: sharing negative attitudes of others promotes feelings of familiarity. *Personal. Soc. Psychol. Bull.* 37(4):481–91

- Wegener DT, Petty RE, Blankenship KL, Detweiler-Bedell B. 2010. Elaboration and numerical anchoring: implications of attitude theories for consumer judgment and decision making. *J. Consum. Psychol.* 20(1):5–16
- Welch S, Sigelman L. 2011. The “Obama Effect” and White racial attitudes. *Ann. Am. Acad. Polit. Soc. Sci.* 634(Feb.):207–20
- Wolsko C, Ariceaga H, Seiden J. 2016. Red, white, and blue enough to be green: effects of moral framing on climate change attitudes and conservation behaviors. *J. Exp. Soc. Psychol.* 65:7–19
- Yang H, Stamatogiannakis A, Chattopadhyay A. 2015. Pursuing attainment versus maintenance goals: the interplay of self-construal and goal type on consumer motivation. *J. Consum. Res.* 42(1):93–108
- Yang Y, Land KC. 2013. *Age-Period-Cohort Analysis: New Models, Methods, and Empirical Applications*. Boca Raton, FL: CRC Press
- Zabel KL, Biermeier-Hanson BBJ, Baltes BB, Early BJ, Shepard A. 2016. Generational differences in work ethic: fact or fiction? *J. Bus. Psychol.* 32(3):301–15
- Zell E, Su R, Li H, Ho M-HR, Hong S, et al. 2012a. Cultural differences in attitudes toward action and inaction: the role of dialecticism. *Soc. Psychol. Personal. Sci.* 4(5):521–28
- Zell E, Warriner AB, Albarracín D. 2012b. Splitting of the mind: when the you I talk to is me and needs commands. *Soc. Psychol. Personal. Sci.* 3(5):549–55

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