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The role of certainty (and uncertainty) in attitudes and persuasion

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Psychological certainty plays a key role in shaping people's thoughts, judgments, attitudes, and behaviors. This article provides an overview of recent work on *attitude certainty*, which has been the subject of considerable attention in the social and consumer psychology literatures. In particular, this article describes the consequences of feeling certain or uncertain of an attitude, outlines the metacognitive appraisals that shape people's feelings of certainty or uncertainty, and highlights recent developments suggesting that strategically inducing uncertainty during message processing can enhance message impact. In essence, whereas uncertainty can stimulate processing and create a desire for information, certainty helps give an attitude durability and impact.

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Psychological certainty is a core aspect of the human experience. It plays a fundamental role in shaping people's thoughts, decisions, attitudes, and behaviors [1,2]. People think differently, make different decisions, form different evaluations, and act in different ways when they feel certain as opposed to uncertain. Within the social and consumer psychology literatures, one form of certainty that has been the subject of particularly intense scrutiny is *attitude certainty* [3,4]. Indeed, there has been a surge of scholarly interest in attitude certainty over the past two decades. This surge initially was driven by the discovery that attitude certainty is an easy to measure yet profoundly important aspect of people's attitudes, and that there are specifiable actions people can take to augment or undermine their own or others' certainty. Very recently, however, a second wave of research has emerged focused on the possibility that there can be an upside to uncertainty that gives it considerable utility as a persuasive device. This article aims to review recent work on attitude certainty to offer a basic understanding of what it is, where it comes from, and what it does.

Attitude certainty

Whereas an attitude refers to one's evaluation of something — for example, the extent to which one favors a brand, likes a product, or supports a political candidate — attitude certainty refers to the subjective sense of confidence or conviction one has about an attitude [3,5]. In essence, attitude certainty is a metacognitive tag reflecting the degree to which one feels that an attitude is correct and/or clear in one's mind [1,6]. Importantly, this feeling can be independent of the attitude itself. That is, certainty is conceptually and empirically distinct from attitude valence (whether the attitude is positive or negative) and extremity (whether the attitude is somewhat or very positive or negative). Two diners could report the exact same attitude toward a new restaurant, for instance, yet differ dramatically in how certain they are if they believe their attitudes are based on varying degrees of personal experience. Indeed, recent work even highlights circumstances in which extreme attitudes (e.g., 8 on a 9-point scale) can be held with less certainty than their more moderate counterparts (e.g., 6 on a 9-point scale) [7].

Although attitude certainty is inherently subjective, it is a crucial dimension of attitude strength [8]. Generally speaking, the more certain one is of an attitude, the stronger — that is, the more durable and impactful — the attitude is [4,5]. For example, attitudes held with certainty are more resistant to persuasive attack and other forms of influence than are attitudes held with uncertainty [6,7,9,10]. Even in the absence of attack, attitudes held with high rather than low certainty tend to persist longer over time [11]. In addition, attitude certainty plays a key role in attitude-behavior correspondence such that attitudes held with high (versus low) certainty are more predictive of behavior [12–15]. Finally, a growing body of work suggests that attitude certainty is a crucial determinant of attitudinal advocacy: As people become more certain of their attitudes, they become increasingly willing to talk about their attitudes, share their opinions with others, sign pro-attitudinal petitions, and even persuade others to adopt their views [16–20].

An appraisal-based framework for certainty

Given the importance of attitude certainty in guiding the current and future life (and influence) of an attitude, it is perhaps unsurprising that considerable research has been directed toward illuminating its antecedents, or origins. Where does attitude certainty come from? As Rucker *et al.* [3] recently argued, the antecedents of certainty can be organized around a core set of metacognitive appraisals that underlie how certain or uncertain people feel about

their attitudes, and how this feeling of certainty or uncertainty can be shaped by contextual factors (see also [5^o,21]). More specifically, Rucker and colleagues identified both informational and experiential inputs to certainty, and organized these inputs into a finite set of appraisals that people use to gauge and adjust their own certainty levels with respect to a particular object or issue. These appraisals, outlined below, can be viewed as a set of questions people ask themselves when assessing how certain they are (see Figure 1).

How complete is one's information?

One key appraisal dimension concerns people's perceptions of how complete their information is in a particular domain or topic area. In general, the more complete an individual perceives her information to be, the more certain she will feel about her attitude. For instance, the sheer amount of information one has about something can affect one's attitude certainty. All else equal, the more information people believe they have (and the less missing information they think there is), the more certain they tend to be of their attitudes [22–24]. Similarly, people sometimes evaluate their own thoughtfulness as an input to certainty [25]. Even holding actual thought constant, the more people *perceive* that they have thought about an object or issue, the more certain they tend to be of their attitudes toward it ([17,23,26], but see [27]). Of course, completeness perceptions also depend on the type of information one has or the type of thinking one believes one has done. For example, when people perceive that both sides of an issue have been considered — such as when they perceive that they have weighed both the pros and cons of a product — they typically feel more certain of their resultant attitudes [28,29].

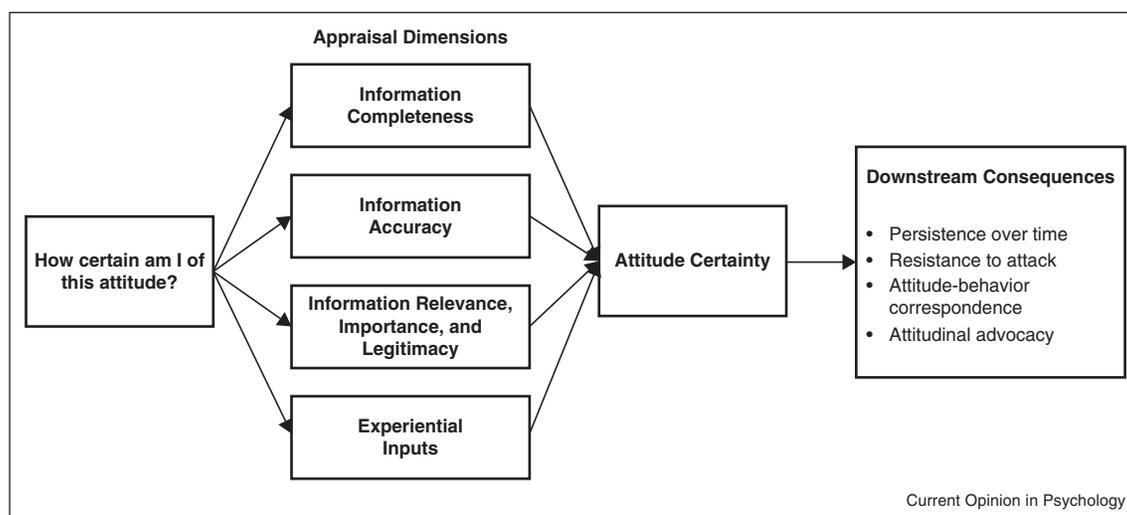
How accurate is one's information?

People also appraise their attitudes for accuracy. The more accurate people believe the information underlying an attitude is, the more certain they feel about that attitude. As a classic example, perceived social consensus affects attitude certainty. Unless uniqueness goals are particularly salient in a given situation, people generally feel more certain of their attitudes when they believe that others share them [6^o,30,31], and when they believe that others share their individual thoughts and perceptions of attitude-relevant information [32^o,33]. In essence, learning that others' attitudes, thoughts, and perceptions match our own, or that we are in the majority, provides social validation and fosters a feeling of attitude correctness [6^o].

Relatedly, attitude certainty can be affected by the consistency of the information people have about a topic. All else equal, people are more certain of their attitudes when their attitude-relevant information is consistent rather than contradictory [23,34^o,35,36], presumably because consistency helps build people's confidence in the accuracy of the information.

Finally, accuracy appraisals can be affected by perceptions of personal experience. For instance, people hold their attitudes with greater certainty, and are more willing to act on and defend those attitudes, when they have direct personal experience with the attitude object (e.g., when they have tasted a food versus read about the taste) [13^o,37]. Likewise, people feel more certain of their attitudes when they receive attitude-relevant information from a source with high rather than low expertise [38], presumably because experts have more knowledge and

Figure 1



Appraisal-based model of attitude certainty.
Adapted from Rucker *et al.* [3^o].

experience and, thus, access to better information (see also [39]).

How relevant, important, and legitimate is one's information?

People also assess their information for its relevance, importance, and legitimacy as attitudinal input. In short, people hold their attitudes with greater certainty when they believe those attitudes are based on relevant, important, and legitimate information. For example, Tormala and colleagues found that people feel more certain of their attitudes when they perceive that they have based them on the evidence supporting a particular conclusion rather than the appealing or unappealing nature of the source who presented that evidence [40]. The logic is that basing one's attitude toward an issue on perceptions of the people associated with that issue seems less legitimate (making the attitude less valid) than basing one's attitude on the merits of the evidence at hand. Also relevant, research has shown that when people resist persuasive attacks on their attitudes, they become more certain of those attitudes as long as they believe the attacks contained strong arguments or made a credible case [9*,10*,15]. After all, the strongest arguments for a position are most diagnostic of that position's validity (compared to, for example, weaker arguments that might have been made), which makes them feel more relevant, important, and legitimate as a basis for assessing one's certainty.

What is one's subjective experience thinking about, retrieving, or using one's attitude?

Finally, people sometimes gauge their certainty by appraising experiential inputs rather than evaluating information or evidence. When an attitude simply feels good or seems right, people hold it with greater certainty. For example, feeling happy can boost one's feeling of certainty relative to feeling sad [41,42*]. Similar boosts can be derived from feelings of power: People feel more certain of their own thoughts and opinions when they feel powerful rather than powerless [43]. Perhaps the most extensive evidence for experiential inputs to certainty exists in research on subjective ease, or processing fluency. It is now well-established that feelings of fluency predict subjective certainty [44–46]. For example, the easier it is to form or think of one's attitude, or generate or retrieve arguments supporting one's attitude, the more certain one will be [47,48]. In fact, merely expressing an attitude on several attitude scales can boost attitude certainty compared to expressing it just once [6*,18], at least partly because repeated attitude expression makes an attitude feel more accessible [49].

A hidden upside to uncertainty

Certainty — and, conversely, uncertainty — is a foundational construct in the attitudes and persuasion literature. It is deeply embedded in classic theories such as

social comparison theory [50] and self-perception theory [51], which highlight some of the mechanisms people use to determine their own beliefs and opinions when they are initially uncertain of them. It also features prominently in multi-process theories of persuasion such as the elaboration likelihood model [52] and heuristic-systematic model [53], which postulate that people generally seek correct attitudes and process persuasive messages more deeply when the desire to be correct is heightened (e.g., when the attitude issue is personally important). In the last two decades, the bulk of the research devoted to certainty in the attitudes and persuasion domain has been focused on understanding its antecedents and consequences as a dimension of attitude strength. This research, summarized above, converges on a central conclusion: that certainty is a catalyst that turns attitudes into action [see also 3,5]. The more certain people are of their attitudes, the more they cling to and defend those attitudes, the more they act on those attitudes, and the more they advocate on behalf of those attitudes.

On the basis of this conclusion, a great deal of work on attitude certainty concludes with recommendations on how to foster certainty to build these kinds of outcomes. Indeed, a practitioner's guide to persuasion would be well-advised to outline a variety of certainty-boosting techniques to help translate attitudes into action — for example, to turn liking a product into buying or recommending that product, to turn endorsing a candidate into voting for that candidate, and so on. Recently, however, persuasion researchers have begun to shift their attention to understanding when and why there might be an upside to uncertainty.

The allure of uncertainty

In short, although people tend to act on their attitudes when they feel certain as opposed to uncertain, they *think more deeply* — for example, process persuasive messages more carefully — when they feel uncertain as opposed to certain ([5*,34*,42*,52,53] cf. [54]). Building on this general insight, there is a growing body of evidence suggesting that inducing uncertainty early in a message can increase people's engagement with that message and, ultimately, promote persuasion (see Table 1). The reason is that uncertainty motivates people to process information more deeply in order to restore certainty. If that processing attunes people to the arguments contained in a message, those arguments can realize greater persuasive impact.

Source uncertainty

As one example, recent studies suggest that explicitly referencing one's own uncertainty (rather than certainty) can increase persuasion under some conditions. Specifically, Karmarkar and Tormala [55*] found that when an expert source expresses some level of uncertainty in a persuasive appeal, that uncertainty violates people's expectations,

Table 1

Recent empirical support for the upside of uncertainty in persuasion.

Variable	Source	Key finding
Source uncertainty	Karmarkar and Tormala [55*]	Expressing uncertainty can introduce a persuasive advantage. Experts elicited deeper processing and were more persuasive when they expressed uncertainty rather than certainty.
Message contradictions	Reich and Tormala [56]	Contradicting oneself can boost persuasion. When trust was high and the source presented strong arguments, contradictory messages generated more favorable attributions and were more persuasive than consistent messages.
Message interruptions	Kupor and Tormala [57]	Interruptions can promote persuasion. Momentary interruptions that briefly paused message processing early on increased curiosity, subsequent processing, and persuasion relative to delivering the exact same messages uninterrupted.
Preference for potential	Tormala, Jia, and Norton [58]; Kupor, Tormala, and Norton [59]	Potential can be more exciting and persuasive than achievement. Framing a message in terms of high but uncertain potential (rather than equally high and very certain achievement) increased message processing and persuasion. This effect is more pronounced when tolerance for uncertainty is high.

which stimulates deeper message processing and promotes persuasion as long as the message contains strong arguments. Similarly, Reich and Tormala [56] found that when trusted individuals unexpectedly contradict themselves, offering opposing opinions at two points in time, their contradictions can induce people to process their messages more deeply, which facilitates persuasion when the messages contain strong arguments.

Message interruptions

Uncertainty also can facilitate persuasion when it applies to the message itself — for example, when it leads people to wonder what the arguments for a particular position might be. As a case in point, new studies reveal that although marketers and persuasion practitioners often strive to minimize interruptions when they present persuasive messages to others, interruptions that temporarily pause those messages (and then allow recipients to continue processing unencumbered) can actually enhance persuasive outcomes. For instance, Kupor and Tormala [57] found that inserting a spinning wheel for video buffering into the early moments of a video touting the health benefits of coffee (thus pausing that video for a few seconds) increased viewers' intentions to consume coffee relative to a group of viewers who watched the exact same video without interruption. This effect is driven by curiosity and processing: A momentary interruption early in a message can boost curiosity — a form of interested uncertainty — about what the rest of the message might say, which in turn motivates more thorough processing and increases message impact.

Preference for potential

As a final example, falling a bit outside of the traditional purview of persuasion research, recent work suggests that although people tend to promote others by touting their achievements (e.g., 'He has won an award for his work!'), references to potential (e.g., 'He could win an award for his work!') often are more persuasive [58]. In essence,

although achievement is viewed as more certain and more objectively impressive than potential, potential is more interesting, and provokes deeper processing, precisely because it is uncertain. A person with high potential might achieve a great result, but also might not. This uncertainty pulls people into messages containing high potential claims, which can give those messages greater impact. Follow-up research indicates that this effect is moderated by tolerance for uncertainty, such that the preference for potential (versus achievement) emerges when perceivers' tolerance for uncertainty is high but not low [59].

Conclusion

Psychological certainty plays a crucial role in attitudes and persuasion. Uncertainty stimulates interest in and engagement with a message, whereas certainty transforms attitudes into action and imbues them with meaning and consequence. An optimal persuasion strategy would leverage both insights: using (a) uncertainty to foster message processing and a desire for information, and (b) certainty to build attitude strength and promote attitude-congruent action. Thus, understanding the origins of certainty, and the situational factors that raise and lower it, is a vital endeavor for both theory and practice.

Conflict of interest statement

Nothing declared.

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Papers of particular interest, published within the period of review, have been highlighted as:

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Petrocelli *et al.* conducted several experiments to formally test the notion that attitude certainty can be comprised of two related but distinct constructs: attitude clarity (the subjective sense that one knows what one's attitude is) and attitude correctness (the subjective sense that one's attitude is correct, or valid). Attitude clarity was shown to be influenced by repeated expression manipulations, whereas attitude correctness was influenced by social consensus manipulations.

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