Lay Theories of Manipulation:

Do Consumers Believe They are Susceptible to Marketers' Trickery?

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CONTRIBUTION STATEMENT

Some consumers believe that marketers manipulate them. We propose a conceptual framework to account for factors increasing and decreasing manipulation beliefs. We contribute to existing literature in three ways: First, we explain why some consumers *false-positively* detect persuasion episodes even for persuasion tactics known to be ineffective. Previous researchers have mostly focused on applications of the Persuasion Knowledge Model to situations of true-positive (Hardesty, Bearden, and Carlson 2007) or false-negative (Wei, Fischer, and Main 2008) persuasion detection, and seldom considered the possibility that persuasion knowledge can also provide false-positive errors. Second, we examine *individual differences* that can affect motivation to use persuasion knowledge, linking those differences to core psychological processes. Despite a large literature on persuasion knowledge (Ahluwalia and Burnkrant 2004; Campbell and Kirmani 2000; Williams, Fitzsimons, and Block 2004), this research is the first in consumer behavior to identify the deep psychological roots of core inference-making that affect persuasion detection and over-detection. We also identify other traits that can be particularly predictive of persuasion knowledge access, such as conspiratorial thinking, free will beliefs, personality traits, gender, and age. Finally, we contribute to the literature on *lay theories* about persuasion (Briñol, Rucker, and Petty 2015; Friestad and Wright 1995) and the marketplace (Bolton, Warlop and Alba 2003) by studying how consumers' construal of persuasion episodes can be influenced by the relative salience of marketers' versus consumers' intentions.

ABSTRACT

Marketers know that persuasion is very hard. So, why are consumers determined that marketers can manipulate them? Across five studies, we show that the beliefs about marketing manipulation have deep psychological roots: Consumers higher in motivations to make sense of their environments tend to not only detect persuasion where it exists, but also where there is none. Such beliefs can be weakened when consumers think of themselves (vs. other consumers) in persuasion situations (study 3) and read concrete (vs. abstract) descriptions of these situations (study 4), but only in consumers with low sense-making drives. Whereas higher sense-making *motives* manifest in greater false-positive manipulation detection, corresponding *abilities* negatively affect false-positives and result in more accurate persuasion detection (study 5). The studies also revealed how manipulation beliefs are related to conspiracy ideation, personality traits, beliefs about free will, gender, and age. Implications for marketing segmentation and strategies for attenuating false-positive manipulation detection are discussed.

Keywords: persuasion knowledge, lay theories, beliefs, influence, sense-making, mentalizing

Misunderstandings and lethargy perhaps produce
more wrong in the world than deceit and malice do.
At least the latter two are certainly rarer.

– Johann Wolfgang von Goethe, *The Sorrows of Young Werther*

We are naturally skilled at persuading and detecting persuasion in others (Mercier 2017, 2020; Sperber et al. 2010). Although consumers can use persuasion knowledge to detect and respond to persuasion attempts (Friestad and Wright 1994), their persuasion armor is not perfect: Consumers can fail to detect persuasion when it in fact occurs (false-negatives) or to erroneously detect persuasion where none exists (false-positives). Anecdotally, many consumers appear to believe in the power of subliminal messaging when such tactics' effectiveness is marginal at best (Trappey 1996). Likewise, people seem to believe in the pervasive power of political advertising and propaganda, when political scientists have documented repeatedly that their effects on people's decision-making are trivial (Adena et al. 2015; Broockman and Green 2014; Davies 1997). Finally, there is growing evidence that the effects of commercial advertising are modest and ephemeral (Blake, Nosko, and Tadelis 2015; DellaVigna and Gentzkow 2010). Despite its questionable effectiveness, companies spend globally over $500 billion each year on advertising, with spending projected to grow even more in the next five years (GroupM 2018).

As many marketers and politicians will quickly admit, persuasion is tough—it is difficult to persuade consumers and voters to adopt a new opinion, attitude, or behavior. Then what explains the ease with which consumers seem to believe they can be manipulated? Although persuasion knowledge is an issue of longstanding interest (Ahluwalia and Burnkrant 2004; Campbell and Kirmani 2000; Williams, Fitzsimons, and Block 2004), we

know little about why some consumers seem especially prone to detecting persuasion attempts (rightly or wrongly). Existing models (Friestad and Wright 1994) do well in explaining how consumers *successfully* detect persuasion attempts but say less about consumers' mistakes. Here we extend prior theory to understand when and why consumers make *false-positive* errors about the presence of marketplace manipulation.

The Persuasion Knowledge Model (Friestad and Wright 1994) suggests that consumers' understanding of advertising and sales presentations rests in their basic cognitive skills and motivations to interpret everyday events. We extend this model by identifying factors that increase the likelihood of both true and false detection of persuasion. We examine two kinds of factors—individual differences that influence the saliency of *marketers' intentions to persuade*, and situational factors that influence the saliency of *consumers' intentions to cope with persuasion*. We argue that, in combination, these factors determine consumers' likelihood of detecting marketing manipulation—even when none exists.

CONCEPTUAL OVERVIEW

Persuasion knowledge rests in consumers' basic socio-cognitive skills and experience with persuasion, advertising, and marketing communications (Friestad and Wright 1994). According to attribution theory (Heider 1958), consumers often take a cause-and-effect orientation toward persuasion attempts, trying to understand why someone wants to influence their attitudes and choices. Such inferences typically (but not always; Isaac and Grayson 2017) lead consumers to resist persuasion attempts (Brehm 1966; Campbell and Kirmani 2000; Wright 1985). Previous researchers have mostly focused on applications of the Persuasion Knowledge Model to situations of true-positive (Hardesty, Bearden, and Carlson 2007) and false-negative (Wei, Fischer, and Main 2008) persuasion, and seldom considered that persuasion knowledge can lead to false-positive errors in persuasion detection. To understand why persuasion knowledge can produce both true- and false-positives, we need to dive deeper into the psychology underlying consumers' core inference-making mechanisms.

According to our conceptual model (figure 1), individuals' understanding of persuasion includes both marketers' intention to persuade and consumers' intention to cope with persuasion. We propose that beliefs in marketing manipulation depend on which of these is more salient: Higher salience of marketers' intention to persuade *increases* manipulation beliefs, whereas higher salience of consumers' intention to cope with persuasion *decreases* manipulation beliefs.

What influences the salience of marketers' versus consumers' intentions? We study two types of factors.

First, *individual differences* can influence the salience of marketers' intention to persuade. Consumers differ in the strength of their basic motivation to make sense of their environment. Although understanding the environment is crucial for detecting potential

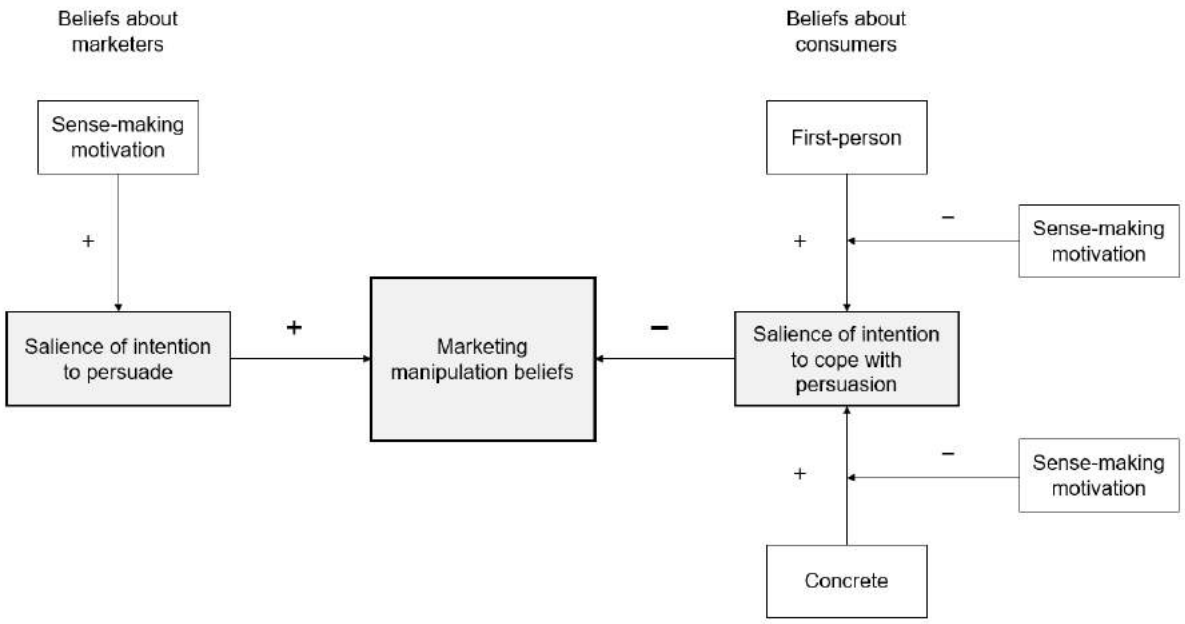
threats, they sometimes make errors in threat-detection—it is costlier to fail to notice a threat when it exists (false-negatives) than to detect a threat that does not exist (false-positives). Mistake a boulder for a hyena and you feel foolish; mistake a hyena for a boulder and *you're dead*—evolution has solved this problem by programming us to see patterns even where there are none (Atran 2002; Boyer 2001; Haselton and Buss 2000; Nesse 2001). This is one reason why many are attracted to conspiracy theories: Most conspiracy theories are false, but a few of them are true, so it can seem safer to assume they are *all* true. Likewise, as people have evolved to avoid trickery (Cosmides and Tooby 1992), some consumers may instinctively activate their "persuasion armor" and detect persuasion even if there is none. As such consumers focus on marketing manipulation as a threat (Higgins 1997), they are more prone to false-positive detection of persuasion and higher manipulation beliefs.

Second, *situational factors* can influence the salience of consumers' intention to cope with persuasion by affecting the psychological distance between the consumer and the persuasion situation. As consumers can more readily simulate their own mental states than those of others (Waytz and Mitchell 2011), using the self as their reference point, different ways in which persuasion is removed from that point—such as social distance or level of abstractness—increase psychological distance (Trope and Liberman 2010). When persuasion situations are framed in the first-person (vs. third-person), consumers' own persuasion-coping intentions should be more readily available to them, leading to lower manipulation beliefs. Similarly, we expect manipulation beliefs to be lower in the concrete (vs. abstract) framing, as intentions and free will are more available in concrete versus abstract situations (Kim et al. 2016, 2017; Nichols and Knobe 2007). However, the situational effects are likely to be lesser for consumers higher in threat-detection—as these consumers are naturally more sensitive to potential jeopardy, the intentions of marketers will always be top of mind. Thus, the effect of

individual differences is expected to counteract the effect of situational variation for these consumers.

FIGURE 1

CONCEPTUAL MODEL



Beliefs about Marketers' Intentions to Persuade: Sense-Making Motivation

Consumers are motivated to seek out hidden explanations to understand their experiences—a *sense-making motivation* (SMM) (Chater and Loewenstein 2016; Laurin, Kay, and Moscovitch 2008). Consumers search for structure or patterns and are particularly prone to seeking the causal explanations of events (Craik 1943), especially if an event is threatening (Legare, Gelman, and Wellman 2010) or inconsistent with prior beliefs (Khemlani and Johnson-Laird 2011) or if understanding its causes can reinstate a sense of control and predictability (Malle and Knobe 1997; Miller and Steinberg 1975). Consumers infer explanations through fallible but useful heuristics (Johnson, Valenti, and Keil

2019; Khemlani, Sussman, and Oppenheimer 2011; Lombrozo 2007, 2016) and intuitive theories (Bhattacharjee, Dana, and Baron 2017; Bolton, Warlop and Alba 2003; Fernbach et al. 2013; Johnson, Zhang, and Keil 2020; Sloman and Fernbach 2017).

For our purposes, a particularly powerful aspect of sense-making derives from consumers' constant attunement to the presence of other people in their environments, automatically inferring their beliefs, emotions, and intentions (Bateman and Fonagy 2006; Kovács, Téglás, and Endress 2010; Premack and Woodruff 1978). Evolution has produced in humans a *mentalizing* drive as a part of sense-making used to understand other species and social structures. Like a scientific theory, from early childhood consumers' intuitions posit unobserved entities (internal states of one's self and others) to support explanation and prediction (Gopnik and Wellman 1992).

Since consumers differ in their motivations both to seek structure (Kruglanski and Sheveland 2012) and to seek intentions (Liotti and Gilbert 2011), these differences plausibly would have downstream effects on persuasion knowledge activation. As mentalizing, and sense-making in general, partly function to facilitate threat detection and vigilance (Sperber et al. 2010), in our framework we operationalize SMM by measuring consumers' structure-seeking and mentalizing drives to predict beliefs about being manipulated.

Although our structure-seeking and mentalizing drives are essential for navigating life, they both lead to false-positives as in the hyena/boulder example: We often see structures and intentions where none exist. In some instances, unwarranted structure-seeking might be caused by a natural tendency to view the world in terms of specific purpose and design (Banerjee and Bloom 2014; Evans 2000, 2001; Kelemen 1999a, 1999b, 2004; Willard and Norenzayan 2013), which makes individuals sometimes turn to fallacious explanations (e.g., see images in noise or perceive conspiracies when there are none; Whitson and Galinsky 2008). Moreover, people differ in this tendency. For example, *hypermentalizers*

over-attribute mental states to others (Dziobek et al. 2006; Sharp and Vanwoerden 2015), experiencing overactive social threat perception (Green and Phillips 2004) and hypersensitivity to others' motives, intentions, and mental states. Thus, individuals dispositionally higher in intention- and structure-seeking may be especially prone to falsely detect intentions and threats, including marketing manipulation.

Although persuasion is not always effective (or intentional; Gass and Seiter 2015), three features of human psychology make high-SMM consumers especially prone to falsely detecting manipulation. First, consumers believe that intentions generally lead to the intended outcome (Boyer and Petersen 2018), so they perceive marketing persuasion as the result of marketers' planned actions and respond to it accordingly. Second, if consumers perceive persuasion as morally unacceptable or violating societal norms (Malle and Knobe 1997; Mandelbaum and Ripley 2012), they will see it as more intentional than consumers who do not have such a perception, because norms play an important role in mental states ascriptions (Uttich and Lombrozo 2010). Finally, intention-seeking may be especially prominent, if consumers believe that companies are motivated by selfish goals to make profits that are thought to necessarily lead to harmful social outcomes (Bhattacharjee et al. 2017). Such beliefs might make some consumers particularly prone to thinking that marketers are dishonest, deceptive, and manipulative. This tendency is expected to be higher in people with higher SMM because they are especially motivated to seek intentions, even where none exist.

Thus, on the one hand, higher SMM makes consumers correctly identify persuasion attempts where they exist. On the other hand, such motivation might also make them *misidentify* persuasion where there is none. To address both types of situations, we divided marketing persuasion tactics into valid (empirically tested and considered effective; e.g., targeted online advertising) and dubious (without practical effectiveness; e.g., hypnosis in personal selling). Based on this, we hypothesized:

H1a: Consumers with higher SMM are likelier to accurately detect marketing persuasion where it exists, believing that valid tactics are more effective than consumers low in these traits.

H1b: Consumers with higher SMM are likelier to erroneously detect marketing persuasion where it does not exist, believing that dubious tactics are more effective than consumers low in these traits.

Hypothesis 1 concerns the effects of sense-making *motivations* on beliefs about marketing manipulation, rather than sense-making *abilities*. Motivations to understand events can coincide with or deviate from corresponding abilities (Kunda 1990; Wechsler 1950), and, therefore, lead to accurate or illusory persuasion detection. Abilities, in contrast, will most likely lead to accurate persuasion detection, as they facilitate the skills needed to find the correct answers (Pennycook et al. 2012; Swami et al. 2014). We expect that:

H2: Consumers with better sense-making *abilities* will be less prone to false-positive persuasion detection and beliefs in dubious marketing manipulation.

Beliefs about Consumers' Intentions to Cope with Persuasion: Situational Factors

A full understanding of persuasion requires thinking about both sides of the interaction—marketers and consumers. Thus, persuasion should be believed less effective when consumers' persuasion coping strategies are made more salient relative to marketers' intentions. Our model considers two ways of framing situations to influence relative salience, both using the idea that smaller psychological distance (Trope and Liberman 2010) between

the consumer and the persuasion episode leads the consumers' (persuasion-resisting) intentions to be more salient.

First, *first-person versus third-person framing*. A passive observer of a persuasion episode may have less intuitive access to persuasion armor compared to a consumer actively immersed in the social interaction who is trying to use that armor (Friestad and Wright 1994; Gilbert, Jones, and Pelham 1987). Existing research shows that consumers, indeed, believe themselves less susceptible to mass media and social influence compared to others (Davison 1983; Duck and Mullin 1995; Innes and Zeitz 1988; Perloff 1999). This difference is explained by the *third-person effect*: Individuals' own intentions seem more salient to them than intentions of others (Kruger and Gilovich 2004), including their intentions to cope with persuasion. Moreover, consumers' introspection enhances this third-person effect (Pronin, Gilovich, and Lee 2004), so that individuals are motivated to think about their own coping intentions, but have little motivation to think about others' intentions to do the same.

Although the third-person effect has been studied in consumer behavior (Gunther and Thorson 1992; Sagarin et al. 2002), most of the studies concentrated on the third-person effect in persuasiveness of advertising, therefore, it is unclear whether the effect generalizes to marketing manipulation more broadly. To address this question, we hypothesize:

H3: Consumers will evaluate marketing tactics described in the first-person framing as less effective than those in the third-person framing.

The second situational factor we consider is *abstract versus concrete framing*. Based on our theorizing that empathizing with consumers would lower manipulation beliefs by making persuasion armor more salient, we speculated that the level of concreteness of persuasion description should have a similar effect. When situations are described concretely,

consumers tend to ascribe more responsibility, controllability, and free will to people in those situations (De Brigard, Mandelbaum, and Ripley 2009; Nichols and Knobe 2007). This happens because concrete descriptions make psychological states, such as intentions, more salient than do abstract descriptions (Kim et al. 2016, 2017; Murray and Nahmias 2014; Sinnott-Armstrong 2008). Analogously to first-person framing, concrete framing should therefore make consumers' intentions to cope with persuasion especially salient, lowering manipulation beliefs:

> **H4:** Consumers will evaluate marketing tactics as less effective when described concretely rather than abstractly.

We argue that both situational framings are important in understanding beliefs about marketing manipulation. Consumers often think about manipulation in first-person (e.g., about their own retail experience) and third-person (e.g., when warning their friends about companies) terms. Similarly, consumers often think about manipulation abstractly (e.g., when thinking about public policy) and concretely (e.g., while shopping).

In the usual case, the first-person and concrete framings would reduce threat detection because they make the consumers' intentions to cope with persuasion more salient compared to the third-person and abstract framings. But this effect should not occur for consumers especially high in SMM because such consumers focus on the threat—the marketer—rather than the consumer resisting persuasion. Given the saliency of this threat for high SMM consumers, the risk of false-negatives would loom large and increasing the saliency of consumers' coping intentions should have little effect. Therefore, we hypothesize:

H5: Situational framings that increase salience of consumers' resisting intentions (first-person and concrete) will decrease manipulation beliefs only in consumers with low SMM; in consumers with high SMM there will be no such effect.

To the best of our knowledge, this research is the first in consumer behavior to empirically show that persuasion knowledge access has deep psychological roots in basic inference-making mechanisms, such as how we make sense of others' minds and events in the world more broadly. Separately, we identify other individual differences that might affect persuasion knowledge access. For instance, we argue that beliefs about marketing manipulation are part of a broader conspiracy ideation, and that beliefs about free will can explain manipulation beliefs. Also, we test whether personality traits and demographics can predict manipulation beliefs. Finally, we examine how inaccurate beliefs about the marketplace can lead to distortions in consumers' attitudes and behaviors contributing to the literature on lay theories (Bolton et al. 2003; Briñol, Rucker, and Petty 2015; Friestad and Wright 1995).

OVERVIEW OF STUDIES

We test our hypotheses across 5 studies, examining how individual differences and situational influences shape consumers' beliefs about marketing manipulation. Studies 1 and 2 test our core prediction—that SMM can predict variability in beliefs about marketing manipulation (hypotheses 1a and 1b)—using familiar and novel marketing tactics, respectively. In studies 3 and 4, we test our framework that manipulation beliefs depend on thinking about marketers' intentions to persuade and customers' intentions to cope with persuasion. Study 3 tests the effect of first- versus third-person framing of persuasion

situations, examining both the main effect and its moderation by SMM (hypotheses 3 and 5), while study 4 tests the analogous effects of concrete versus abstract framing (hypotheses 4 and 5). Next, study 5 examines whether sense-making *abilities* have the same predictive power on manipulation beliefs as the corresponding *motives* we examine in the other studies (hypothesis 2). Finally, since some results prove more consistent than others across studies, we conduct an internal meta-analysis on all studies to test hypotheses 1a and 1b on a much larger dataset. Throughout these studies, we also explore several other theoretically relevant individual differences as potential predictors of marketing manipulation beliefs, including personality traits, conspiratorial thinking, beliefs in free will, and demographics such as gender and age.

STUDY 1: BELIEFS ABOUT MARKETING MANIPULATION

Study 1a sought to establish basic relationship between individual differences in SMM and beliefs about the *prevalence* of various familiar marketing persuasion tactics. Study 1B was similar, but measured beliefs about the *effectiveness* of those tactics. We expected that consumers higher in SMM would believe the tactics are both more prevalent and more effective (hypotheses 1a for valid tactics and 1b for dubious tactics).

Method

Participants. All studies recruited convenience samples from online panels. We recruited 150 participants (M_{age} = 39.5, 52.3% female) for study 1a and 150 participants (M_{age} = 39.2, 53.2% female) for study 1b. These studies were conducted simultaneously, and participants were randomly assigned to study 1a or 1b. Participants (N_{1a} = 20; N_{1b} = 26) were

excluded for missing data or errors on attention checks. In this study, we used two attention checks—one after the main task (a recognition memory check) and one in the scale measuring individual differences ("please select '2'"). Any participant was excluded from analysis who either (i) answered more than one-third of the first check questions incorrectly or (ii) failed the second check. This criterion was selected without reference to the data and was used for all studies.

Procedure. Participants read eight vignettes describing marketing tactics (see web appendix A for full list). Six depicted empirically *valid tactics* (e.g., "Stores sometimes make promotions time-limited just so that customers feel a greater sense of urgency to buy at the sale prices"; Aggarwal and Vaidyanathan 2003) and two depicted *dubious tactics* lacking scientific support (e.g., "Door-to-door salespeople can use hypnotic words and body gestures to convince customers to buy things they do not really want"). For each vignette, participants rated their agreement with either the *prevalence* of the tactic ("To what extent do you agree that marketers use this technique?") in study 1a or the *effectiveness* of the tactic ("To what extent do you agree that this technique is effective?") in study 1b. The scale used for measuring their agreement was anchored at –5 ("Strongly disagree") and 5 ("Strongly agree"). Thus, tactic (valid vs. dubious) was manipulated within-subjects.

After the main task, participants completed SMM scale (9 items, $\alpha = .74$) with two subscales. One subscale measured general structure-seeking motivation—need for structure (NFS). The NFS subscale (4 items, $\alpha = .78$; "I enjoy having a clear and structured mode of life") was adapted from the Personal Need for Structure Scale (Neuberg and Newsom 1993; Thompson, Naccarato, and Parker 1989, 1992) and the Need for Cognitive Closure Scale (Kruglanski, Webster, and Klem 1993). Both scales contain questions about one's motivation to improve the explicability of the environment: The Personal Need for Structure Scale measures individual differences in a desire to structure the world into a simplified, more

manageable form in order to increase its predictability. Similarly, the Need for Cognitive Closure Scale measures individual differences in a desire to improve predictability by getting an answer on a given topic compared to uncertainty.

The second subscale measured motivation to understand people—need for mentalizing (NFM). The NFM subscale (5 items, $\alpha = .81$; "I believe that people can see a situation very differently based on their own beliefs and experiences") was adapted from the Interpersonal Reactivity Index (Davis 1983) and Reflective Functioning Questionnaire (Fonagy et al. 2016). We used the Perspective-Taking subscale of The Interpersonal Reactivity Index, which measures individual differences in one's desire to understand others by taking their perspective. The Reflective Functioning Questionnaire, in turn, measures individuals' motivations to understand that others have very different perspectives from their own (one of the key aspects in mentalizing).

All items were answered on 5-point scales (see web appendix B for all items and factor loadings). High scores on these scales point to individual differences in not only correct understanding of the environments, but also in faulty appraisals of non-existent threats.

Finally, participants answered demographic questions and were debriefed.

Results and Discussion

To test our main hypotheses (1a and 1b) that consumers higher in sense-making motivation (SMM) have higher beliefs about valid and dubious tactics, we used multiple regression to separately predict beliefs for valid and dubious tactics from SMM. (See web appendix C for detailed results, including means for each tactic.)

In study 1a, consistent with expectations, consumers higher in SMM more strongly believed in the prevalence of both valid and dubious marketing tactics (b_{valid} = 0.54, *SE* = 0.17, *p* = .002; $b_{dubious}$ = 0.83, *SE* = 0.32, *p* = .012). In study 1b, consumers higher in SMM more strongly believed in the effectiveness of valid but not dubious marketing tactics (b_{valid} = 0.64, *SE* = 0.20, *p* = .001; $b_{dubious}$ = 0.19, *SE* = 0.35, *p* = .590).

Across the two studies, participants' expressed higher beliefs for valid (*M* = 3.07, *SD* = 1.21) than dubious tactics (*M* = 0.65, *SD* = 2.12; *t*(253) = 19.44, *p* < .001, *d* =1.22) (table 1), indicating that they can distinguish between valid and dubious tactics. However, beliefs for dubious tactics were significantly higher than 0 (*t*(253) = 4.87, *p* < .001, *d* = 0.31), meaning that consumers on average believe in the validity of invalid marketing manipulations (e.g., hypnosis in personal selling). As shown in table 1, this finding was consistent across most studies (except study 2 for novel tactics). (In studies 3 and 4, dubious tactics were sometimes rated below 0, but this was generally due to effects induced by our experimental manipulation and predicted by our framework; see below.)

TABLE 1.

MEAN RESPONSES FOR BELIEFS FOR VALID AND DUBIOUS TACTICS IN STUDIES 1–5

	N	*Valid tactics*	*Dubious tactics*
Study 1a	130	3.33 (1.17)	0.95 (2.17)
Study 1b	124	2.78 (1.19)	0.33 (2.03)
Study 2	162	1.04 (1.60)	1.17 (1.64)
Study 3, First-person	177	1.57 (1.71)	–0.59 (2.35)
Study 3, Third-person	180	2.04 (1.26)	–0.12 (2.26)
Study 4, Concrete	176	2.00 (1.18)	–0.30 (2.13)
Study 4, Abstract	174	2.43 (1.18)	0.33 (2.06)
Study 5	340	2.85 (1.20)	0.51 (2.19)

NOTE.—SDs are indicated in parentheses. Study 1a measures prevalence beliefs; studies 1b–5 measure effectiveness beliefs.

Overall, studies 1a and 1b provide initial evidence that sense-making motivation explains variability in consumers' beliefs about valid and dubious marketing tactics. As the results of individual studies were not always consistent with our predictions or with other studies (as in dubious tactics for study 1b), we later report a meta-analysis across all five studies to dramatically increase statistical power and the precision of our estimates. To foreshadow the result, this meta-analysis lends robust support to hypotheses 1a and 1b.

STUDY 2: BELIEFS ABOUT NOVEL MARKETING TACTICS

An alternative explanation of study 1 may simply be that consumers higher in SMM are more accurate in detecting persuasion—although this is plausible only if one believes that strong scientific support is forthcoming for our "dubious" marketing tactics such as subliminal messaging and hypnosis. To rule out this possibility altogether, study 2 relied on pairs of symmetrical and opposite tactics, where one version was valid (according to the literature) and the other dubious (the opposite of the literature). Reporting higher belief in both versions is contradictory and, therefore, inconsistent with the assumption that consumers with higher SMM are more accurate in persuasion detection. To systematically generate matched pairs of valid and dubious tactics, we chose 8 novel tactics reported in the recent consumer psychology literature (e.g., manipulating aisle width to influence variety-seeking; Levav and Zhu 2009). For each tactic, we created a version reporting the study's true result (narrow aisles cause more variety-seeking) and another version reporting the opposite (wider aisles cause more variety-seeking), assigning participants to read one version of each tactic.

A secondary goal was to test whether SMM has a predictive power beyond traditional personality traits studied in consumer behavior (Baumgartner 2002; He and Bond 2015; Matz, Gladstone, and Stillwell 2016). For example, individual differences in conspiracy

beliefs are partly explained by personality traits (Bruder et al. 2013; Hollander 2017; Swami et al. 2010, 2013), suggesting that adding personality traits as covariates can improve the robustness of our conclusions.

Method

Participants. We recruited 200 participants (M_{age} = 39.1; 51.2% female). Participants (N = 38) were excluded for missing data or errors on attention checks (as in study 1, with an additional attention check in the personality scale).

Procedure. The method was similar to study 1b, with three changes. First, the marketing tactics were changed to four real ("Some researchers say that displaying healthy food items to the left of unhealthy food can promote healthier choices compared to displaying them to the right of unhealthy food items"; Romero and Biswas 2016) and four opposite ("Some researchers say that displaying healthy food items to the right of unhealthy food can promote healthier choices compared to displaying them to the left of unhealthy food items") versions of tactics from the consumer literature (see appendix A for full stimuli). Which tactics were presented in the real versus opposite versions was counterbalanced across participants.

Second, after the main task, participants filled out a short Big Five inventory (10 items; Rammstedt and John 2007).

Finally, we altered the NFS subscale in studies 2–5 to increase its reliability by substituting the Need for Cognitive Closure question with two Intolerance of Uncertainty (Freeston et al. 1994) questions. The Intolerance of Uncertainty scale measures individual differences in motivations to avoid uncertainty and to increase control over environment and hence its predictability. Similar to structure-seeking, such motivations make individuals see

patterns (and threats) where they do or do not exist. Therefore, we speculated (correctly, as it turns out) that combining structure-seeking and uncertainty avoidance questions could improve reliability of our NFS subscale (5 items, α = .87) and overall SMM scale (10 items, α = .76) (see web appendix B for updated factor loadings and improved reliability in each study).

Results and Discussion

We used regressions to predict beliefs about effectiveness of marketing tactics from SMM, with personality traits as covariates (VIFs < 1.92). SMM predicted beliefs for both valid (b = 0.92, SE = 0.26, p < .001) and dubious (b = 0.68, SE = 0.27, p = .012) tactics. Conscientiousness had a significant negative effect on beliefs (collapsed across valid and dubious tactics for greater statistical power): b = –0.32, SE = 0.16, p = .050, but no other personality trait was significantly associated with beliefs. (See web appendix D for detailed results and predictability of SMM over-and-above the Big Five personality traits). Overall, participants were unable to distinguish between the real (M = 1.04, SD = 1.60) and opposite versions (M = 1.17, SD = 1.64) of the tactics (t(161) = –1.01, p = .314, d = –0.08), and the ability to distinguish was not related to SMM (ps > .10).

The study was consistent with our hypotheses (1a and 1b) and showed that higher sense-making motivation does not necessarily lead to greater accuracy in persuasion detection—instead, SMM manifests both in more true-positives *and* more false-positives. Study 2 also represents an initial attempt to quantify consumers' beliefs in the power of novel marketing tactics—an important kind of persuasion knowledge, which future research might investigate further.

STUDY 3: PERSUASION OF SELF VERSUS OTHERS

In studies 3 and 4, we turn to situational factors that can influence beliefs in marketing manipulation by increasing the salience of consumers' persuasion armor as a result of decreased psychological distance (Trope and Liberman 2010) between the consumer and the persuasion episode. When consumers consider persuasion episodes from a first-person perspective, they are more likely to introspect and recognize their ability to cope with persuasion attempts, lowering their beliefs in the power of marketing manipulation (hypothesis 3). But we expected to see this effect only among consumers lower in sense-making motivation: For consumers higher in SMM, the threat of marketers' nefarious intentions would remain salient (hypothesis 5).

Study 3 also tests whether consumers who believe in conspiracies also believe in the power of marketing manipulation. Literature suggests that sense-making is linked to conspiratorial thinking (van Prooijen 2012; van Prooijen and van Dijk 2014). Therefore, we speculated that beliefs in marketing manipulation could be a part of a broader conspiracy ideation resulting from sense-making drive.

Method

Participants. We recruited 400 participants (M_{age} = 41.2, 50.7% female) for this study. Forty-three participants were excluded from analysis for missing data or failing attention checks, using the same criteria as study 1.

Procedure. To simplify the study design, we used stimuli from study 1. The method was similar to study 1b, except three changes. First, participants were randomly allocated into two conditions. In the first-person condition, participants were asked to imagine that they are

the consumers in each vignette, and they answered questions about effectiveness of marketing tactics from their perspective as consumers ("Stores sometimes make promotions time-limited just so that customers feel a greater sense of urgency to buy at the sale prices. To what extent do you agree that this is an effective tactic for making you buy more goods?"). In the third-person condition, participants were asked to imagine that some other people (Mark or Laura, manipulated between-subjects) are consumers in these scenarios ("To what extent do you agree that this is an effective tactic for making Mark [Laura] buy more goods?"). We speculated that gender of the protagonist in the vignettes might influence manipulation beliefs as the literature suggests that women are believed to be more gullible (Kray, Kennedy, and Van Zant 2014). Second, in addition to SMM, we also measured participants' metacognitive motivations (5 items, $\alpha = .77$; adapted from Fonagy et al. 2016; "I always know what I feel") as an exploratory measure, as we speculated that metacognition could potentially moderate the effect of condition on beliefs (similarly to SMM in hypothesis 5). Finally, we measured conspiracy beliefs using the Conspiracy Mentality Questionnaire (5 items, $\alpha = .83$; Bruder et al. 2013). All items were answered on 5-point scales.

Results and Discussion

First, we examined whether the results supported our prediction about persuasion and persuasion armor salience (hypothesis 3). They did: Marketing tactics seemed less effective to people in the first-person condition, and more effective in the third-person condition. This was true for both valid ($M_{\text{first}} = 1.57$, $SD = 1.71$, $M_{\text{third}} = 2.04$, $SD = 1.26$; $t(355) = –2.97$, $p = .003$, $d = –0.31$) and dubious ($M_{\text{first}} = –0.59$, $SD = 2.35$, $M_{\text{third}} = –0.12$, $SD = 2.26$; $t(355) = –1.92$, $p = .056$, $d = –0.20$) tactics. This suggests that first-person framing of persuasion can activate consumers' perception of controllability over their actions to cope with persuasion

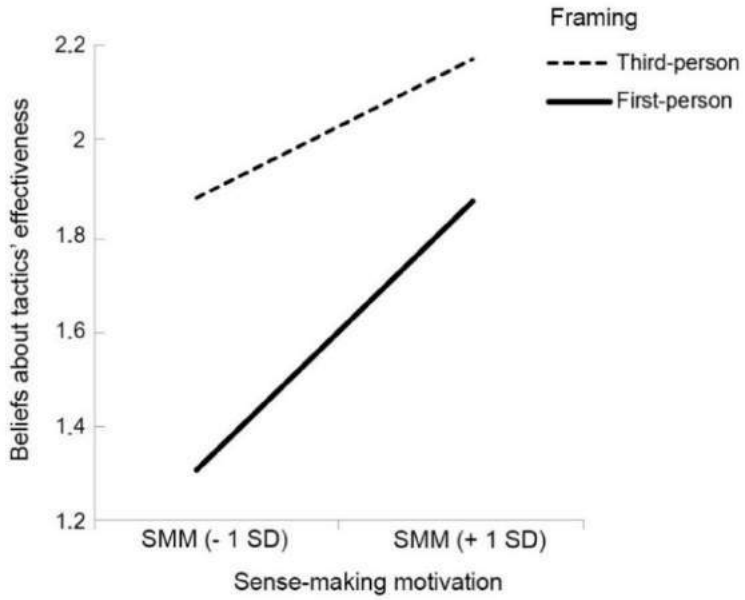
and, therefore, reduce the perceived effectiveness of the tactics. We did not find any effect of the protagonist's gender on beliefs about manipulation (collapsed across valid and dubious) within the third-person condition—either main effect ($F(1, 176) = 0.11$, $p = .737$) or interaction effect with participant's gender ($F(1, 176) = 0.31$, $p = .579$, $\eta^2 < .01$).

Second, we tested whether we could find further support to our main hypotheses that sense-making would drive manipulation beliefs (hypotheses 1a and 1b). Study 3 broadly replicated the results in studies 1b and 2: SMM significantly predicted beliefs for both valid ($b = 0.42$, $SE = 0.15$, $p = .004$) and dubious ($b = 0.59$, $SE = 0.22$, $p = .009$) tactics. Furthermore, SMM and condition had a marginally significant interaction effect (figure 2) on beliefs for dubious ($F(1, 353) = 3.52$, $p = .062$, $\eta^2 = .01$) but not valid ($F(1, 353) = 0.74$, $p = .392$, $\eta^2 < .01$) tactics: the effect of first-person (vs. third-person) condition was only significant for consumers with low SMM, or 1 standard deviation below the mean ($b = –0.43$, $SE = 0.17$, $p = .012$), but it was not significant for those higher in SMM, or 1 standard deviation above the mean ($b = 0.02$, $SE = 0.17$, $p = .896$). (For more detailed spotlight analyses, see web appendix C). This finding is consistent with our hypothesis that taking the perspective of consumers is effective for weakening manipulation beliefs only for consumers lower in SMM and not for those higher in SMM (hypothesis 5). Below we report the results of an internal meta-analysis of studies 3 and 4, where we tested this same effect using the two operationalizations of persuasion resistance salience—first-person versus third-person and concrete versus abstract—from both studies to maximize power.

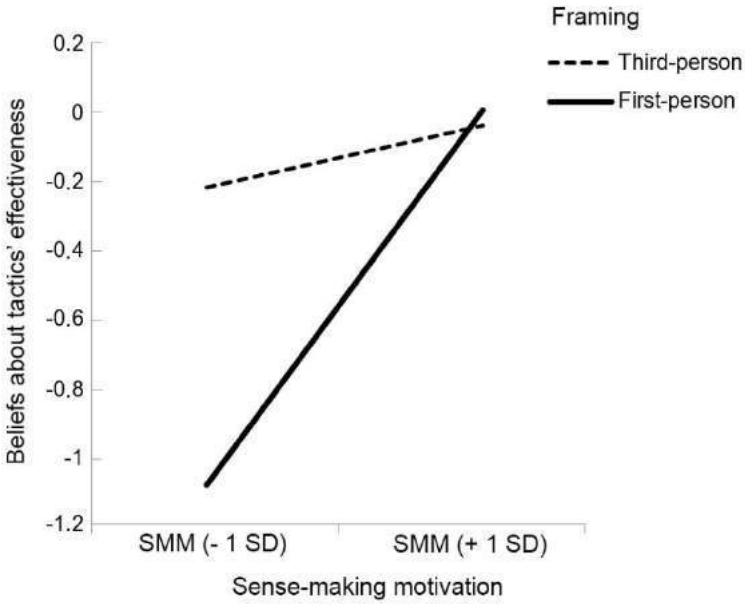
FIGURE 2

INTERACTION EFFECT OF SMM AND CONDITION ON BELIEFS ABOUT THE EFFECTIVENESS OF VALID (A) AND DUBIOUS (B) TACTICS FROM STUDY 3

A



B

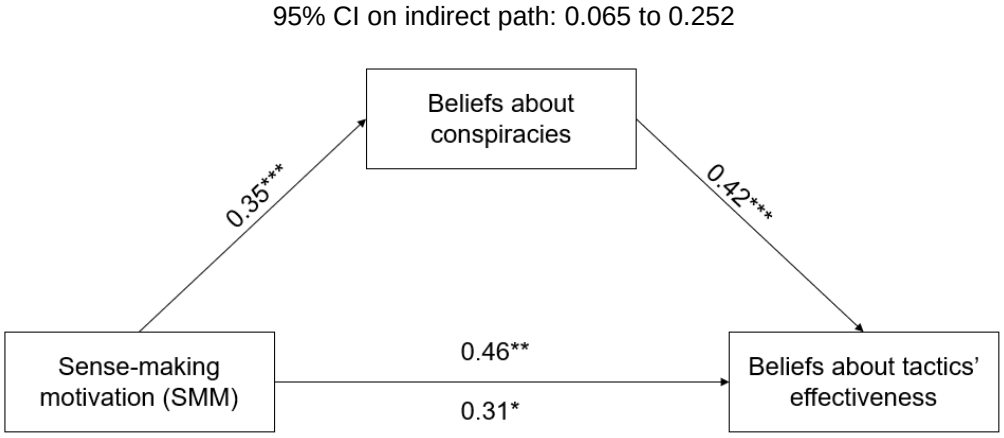


Next, we measured the correlation between manipulation beliefs (pooling together valid and dubious tactics for simplicity and statistical power) and conspiracy ideation: Beliefs

in conspiracies were significantly correlated with beliefs about marketing manipulation, $r(355) = .25$, $p < .001$. We used mediation analysis (PROCESS Model 4; Hayes 2013) to test whether conspiracy mentality mediates the relationships between SMM and manipulation beliefs (collapsing across valid and dubious) (figure 3). The indirect effect was significant: Conspiracy mentality partially mediated the effect of SMM on manipulation beliefs ($b = 0.15$, 95% CI: 0.065 to 0.252). Thus, beliefs in marketing manipulation may be part of a broader conspiracy ideation.

FIGURE 3

MEDIATION MODEL OF BELIEFS COLLAPSED ACROSS VALID AND DUBIOUS FROM STUDY 3



*$p < .05$; **$p < .01$; ***$p < .001$

Overall, study 3 showed that first- versus third-person thinking reduces manipulation beliefs as we predicted (hypothesis 3). But this effect was not equally powerful for all consumers. For consumers low in sense-making motivation, manipulation beliefs are weakened when consumers think of themselves rather than others in persuasion situations, prompting consumers to recognize their persuasion armor. For consumers high in this motivation, conversely, the threat of marketers' manipulative intentions looms large regardless of how the situation is framed (hypothesis 5). Finally, the study supported our

main hypothesis that sense-making drives can indeed impact manipulation beliefs (hypotheses 1a and 1b).

STUDY 4: ABSTRACT VERSUS CONCRETE PERSUASION

A second situational factor that we predict would influence the salience of marketers' intention to persuade versus consumers' intentions to resist persuasion is abstract versus concrete framing. Just as people are more psychologically distant from the consumer in third-person rather than first-person framing, they are more psychologically distant in abstract rather than concrete framing (Trope and Liberman 2010). Indeed, people are more prone to attribute free will in concrete rather than abstract contexts (Kim et al. 2016, 2017; Nichols and Knobe 2007). Thus, we make the analogous prediction that consumers' intentions to resist persuasion attempts will be more salient in the concrete than in the abstract condition, dampening beliefs in the effectiveness of manipulation attempts (hypothesis 4). However, again analogous to the first-person versus third-person effect, this effect should only occur among consumers low in SMM (hypothesis 5). Consumers high in these motivations would always be on the lookout for threats, rendering the situational effects moot.

In this study, we also tested a mechanism explaining the effect of individual differences on manipulation beliefs. In our conceptual framework, we argue that individual differences in SMM increase manipulation beliefs, because high-SMM consumers tend to concentrate on the source of threats—marketers in this case—so that the salience of their intentions to persuade increases manipulation beliefs. High-SMM individuals might think about consumers' intentions to cope with persuasion; however, we expect this to have little effect on manipulation beliefs, as this does not imply any threat and, therefore, is not salient.

To test this, we measured the extent to which participants were thinking about the marketers' and consumers' side of each vignette.

Finally, we measured free will beliefs to explore their effect on manipulation beliefs, as research on free will beliefs shows that they coincide with beliefs about the controllability of one's own actions (Bandura 1982, 2008; Monroe and Malle 2010; Stillman, Baumeister, and Mele 2011). So, we speculated that higher free will beliefs might manifest in greater perceived controllability over consumers' actions to cope with persuasion and, therefore, lower manipulation beliefs.

Method

Participants. We recruited 400 participants (M_{age} = 40.8; 52.9% female). Fifty participants were excluded from the analysis for missing data or failing attention checks.

Procedure. The method was similar to study 1b, except for three changes. First, the vignettes were either presented in a concrete ("Tu Apparel often appeal to customers' desire to 'get a deal' by writing two prices on a tag for their jeans—original price (which is often crossed out) and a new, sale price. This makes the offered price on their jeans seem more attractive, when in fact there was no sale discount.") or abstract ("Advertisers often appeal to customers' desire to 'get a deal' by writing two prices on a tag—original price (which is often crossed out) and a new, sale price. This makes the offered price seem more attractive, when in fact there is no sale discount.") version (manipulated between-subjects). The vignettes had been pretested for correspondence prior to the study (N = 60), where all pairs of vignettes were rated at least 7 on a scale from 1 ("A very poor example") to 9 ("A very good example"). Second, after the main task, participants answered four questions about their thinking of companies and customers in the vignettes on a scale from –5 ("Hardly at all") to 5

("All the time"). One question was measuring the extent to which participants were thinking about customers ("When you answered the questions about marketing techniques on the previous screens, how much were you thinking about these actions from the perspective of the customers?"), and three questions about companies (α = .40; "How much were you thinking about these actions from the perspective of the company?"; see web appendix B for all 4 questions).

Third, participants filled out the Free Will Scale (11 items, α = .83) adapted from the FAD-Plus Scale (Paulhus and Carey 2011) and Lay Dispositionism Scale (Chiu, Hong, and Dweck 1997; Yeager et al. 2011) on a 5-point scale. Higher scores correspond to higher belief in free will and controllability over traits and behavior.

Results and Discussion

First, we tested whether consumers would have higher overall manipulation beliefs in the abstract than in the concrete condition. Participants were expected to think more about the intentions of consumers to resist persuasion in the concrete than in the abstract condition, where participants are better-able to put themselves in the shoes of the consumer, leading to lower manipulation beliefs. Confirming this prediction, participants had higher beliefs in the abstract condition for both valid (M_a = 2.43, SD = 1.18; M_c = 2.00, SD = 1.18; $t(348) = 3.39$, $p < .001$, $d = 0.36$) and dubious (M_a = 0.33, SD = 2.06; M_c = –0.30, SD = 2.13; $t(348) = 2.78$, $p = .006$, $d = 0.30$) tactics. Consistent with our theory, this suggests that concrete framing, which makes persuasion armor more salient, can combat the perception of marketing manipulations, having potential implications for marketing practice.

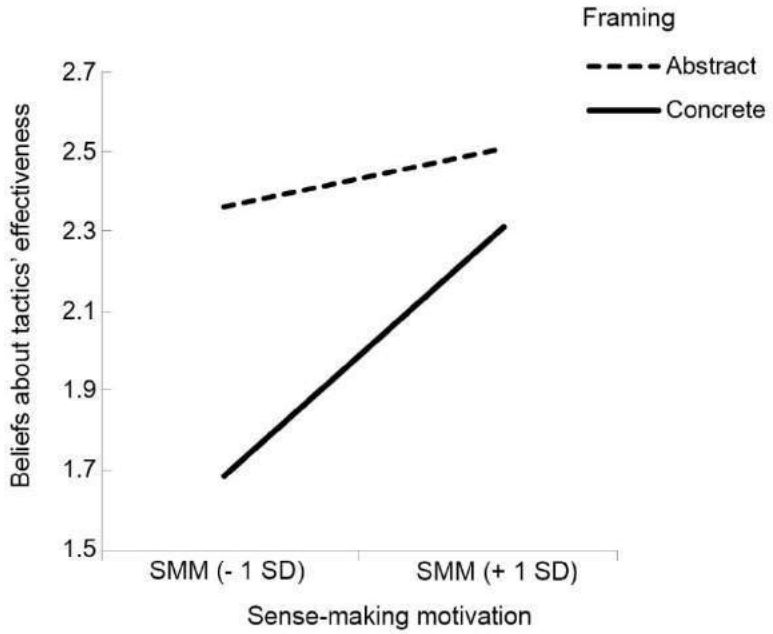
Second, we tested whether we could replicate the effects of SMM on manipulation beliefs, collapsing across condition. The results were directionally similar but not identical to

studies 1b, 2 and 3. SMM predicted beliefs for valid (b = 0.35, SE = 0.11, p = .002) but not dubious tactics (b = 0.29, SE = 0.20, p = .151). Furthermore, SMM and condition had a marginally significant interaction effect (figure 4) on beliefs for valid (F(1, 346) = 3.75, p = .054, η^2 = .01) but not dubious (F(1, 346) = 1.11, p = .294, η^2 < .01) tactics: the effect of concrete (vs. abstract) condition was significant only for consumers with low SMM, or 1 standard deviation below the mean (b = –0.56, SE = 0.09, p < .001) but not for consumers with high SMM, or 1 standard deviation above the mean (b = 0.10, SE = 0.09, p = .265). (See web appendix C for more detailed spotlight analyses.) This is consistent with our prediction that the concrete description of tactics would decrease beliefs in manipulation but only for consumers with lower SMM, whereas the effect is not significant for consumers with higher SMM (hypothesis 5).

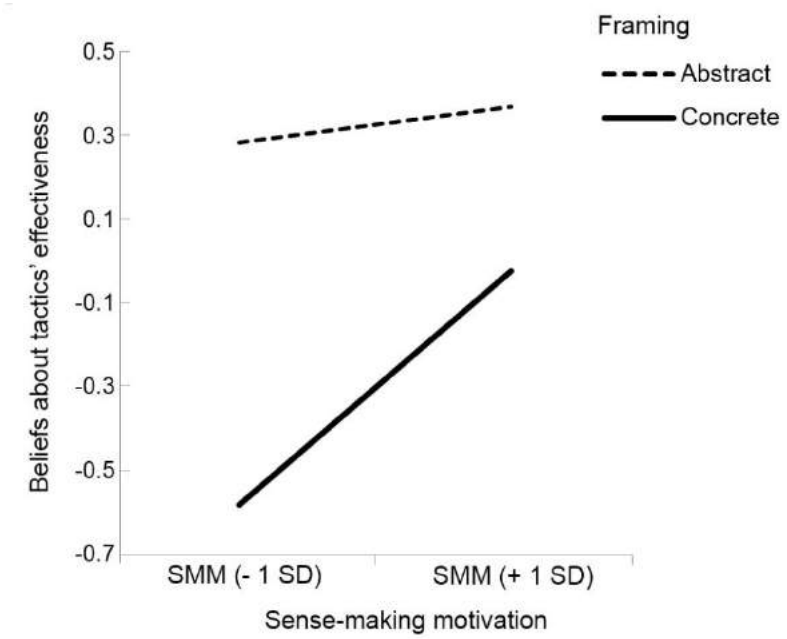
FIGURE 4

INTERACTION EFFECT OF SMM AND CONDITION ON BELIEFS ABOUT THE EFFECTIVENESS OF VALID (A) AND DUBIOUS (B) TACTICS FROM STUDY 4

A



B

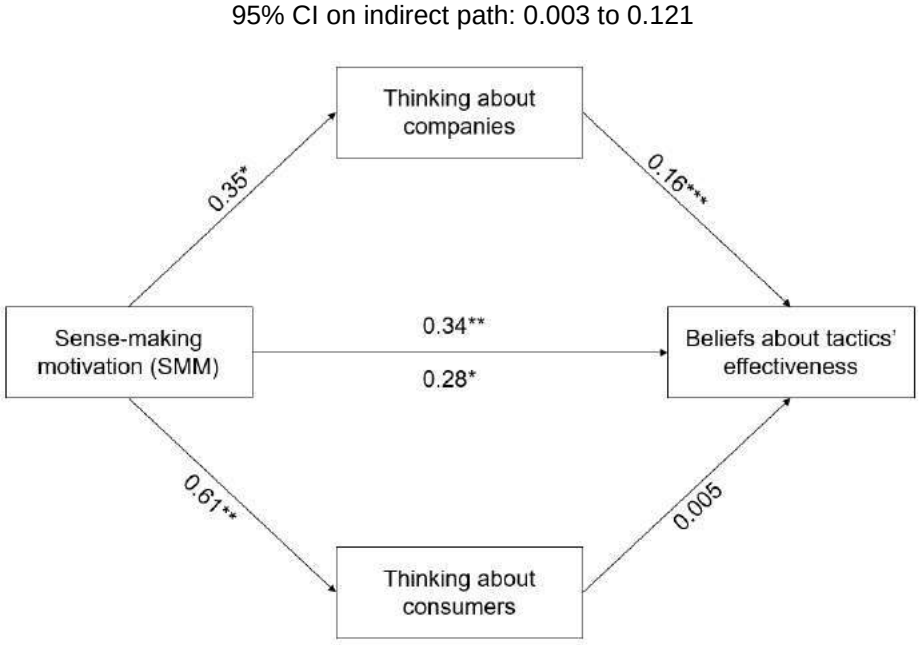


Next, we tested how SMM relates to thinking about both sides in persuasion: We expected that consumers higher on this scale will concentrate mostly on the side of the marketers and not customers, as the threat of persuasion makes the intentions of marketers (and not customers) more salient. We found that SMM significantly correlates with thinking about companies ($r(348) = .12$, $p = .031$), and thinking about customers ($r(348) = .16$, $p = .002$). Parallel mediation analysis (PROCESS Model 4; Hayes 2013) showed that the effect of SMM on manipulation beliefs is partially mediated by thinking about companies ($b = 0.056$, 95% CI: 0.003 to 0.121), but not by thinking about customers ($b = 0.003$, 95% CI: –0.038 to 0.047) (figure 5). This shows that higher SMM results in thinking about both marketers' and customers' sides, but only thinking about marketers has a positive effect on manipulation beliefs, whereas thinking about customers does not. This is consistent with our

conceptual framework stating that SMM increases the salience of marketers' intentions to persuade, but not customers' intentions to cope with persuasion[1].

FIGURE 5

PARALLEL MEDIATION MODEL OF BELIEFS COLLAPSED ACROSS VALID AND DUBIOUS TACTICS FROM STUDY 4



*p < .05; **p < .01; ***p < .001

Finally, we looked at how beliefs about free will relate to beliefs about manipulation. Free will beliefs did not predict beliefs for valid tactics (b = 0.05, SE = 0.10, p = .594), but had a significant negative effect on beliefs for dubious tactics (b = –0.43, SE = 0.17, p = .012) (see web appendix D for detailed results).

[1] One might argue that the reliability of the construct measuring participants' thinking about companies is quite low, therefore, we ran an additional mediation analysis in an attempt to address this issue. When we removed one item to maximize scale reliability (2 items, α = .54), the result was similar: Thinking about marketers mediated the effect of SMM on manipulation beliefs (b = 0.04, 95% CI: 0.000 to 0.101), but not thinking about customers (b = 0.006, 95% CI: –0.034 to 0.050).

In general, the study confirmed our prediction that the concrete (vs. abstract) description of persuasion has a negative effect on manipulation beliefs (hypothesis 4). However, this was true only for consumers lower in SMM (hypothesis 5). Together, studies 3 and 4 support our framework: Manipulation beliefs are lower in situations that cue the saliency of consumers' intentions to resist persuasion, but only among consumers low in sense-making drives. The study also supported our framework stating that SMM makes intentions of marketers more salient (increasing manipulation beliefs) relative to intentions of customers (having no effect on manipulation beliefs).

INTERNAL META-ANALYSIS OF MODERATION EFFECTS (HYPOTHESIS 5)

Since individual studies' estimate of an effect is noisy, summarizing effects across studies using internal meta-analysis has increasingly been recognized as a best practice (McShane and Böckenholt 2017). As hypothesis 5 was tested in studies 3 and 4, we report a meta-analysis here to estimate the strength of the evidence more precisely. (We do so for hypothesis 1 as well after reporting study 5.) Data were analyzed using mixed effects models, where studies (3 and 4), participants, and tactic types (valid or dubious) were given random intercepts; SMM and conditions (first-person vs. concrete or third-person vs. abstract) were fixed effects. We relied on the lme4 (Bates et al. 2015) and the pbkrtest (Halekoh and Højsgaard 2014) packages in R to construct the models and extract p-values.

First, we grand mean-centered SMM across study 3 and 4. Second, we contrast coded conditions: Concrete and first-person were coded as 1 (we treated them as a framing increasing the salience of consumers' intentions to cope with persuasion) and abstract and third-person were coded as –1. Next, we built a model with condition, SMM, and their interaction as fixed factors, random intercepts for participant and item, and manipulation

beliefs as the dependent variable. The results showed that all fixed effects were significant (table 2): SMM and condition significantly predicted manipulation beliefs (b_{SMM} = 0.38, *SE* = 0.09, $p < .001$; $b_{condition}$ = –0.22, *SE* = 0.05, $p < .001$). Furthermore, SMM and condition (concrete vs. abstract, first-person vs. third-person) had a significant moderation effect (figure 6) on manipulation beliefs ($p = .029$). The effect of condition is significant for consumers 1 SD below the mean on SMM (b = –0.34, *SE* = 0.07, $p < .001$) but not for consumers 1 SD above the mean (b = –0.12, *SE* = 0.07, $p = .102$). This finding is consistent with the results of individual studies (3 and 4) and our predictions (hypothesis 5).

TABLE 2

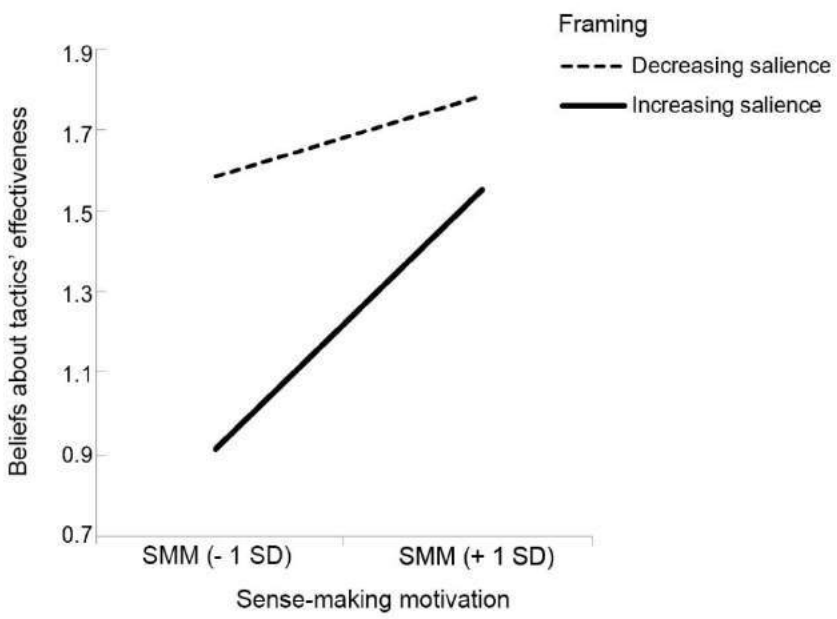
CUMULATIVE INTERACTION EFFECT OF SMM AND CONDITION (COLLAPSED ACROSS STUDY 3–4) ON BELIEFS (COLLAPSED ACROSS VALID AND DUBIOUS TACTICS)

	Estimate	SE	t	df	p
(Intercept)	1.47	0.45	3.30	8.92	.009
SMM	0.38	0.09	4.18	704.74	<.001
Condition (collapsed across S3–4)	-0.22	0.05	-4.51	703.83	<.001
SMM x Condition (collapsed across S3–4)	0.20	0.09	2.19	704.64	0.029

NOTE.—SMM was grand mean-centered across studies 3 and 4.

FIGURE 6

CUMULATIVE INTERACTION EFFECT OF SMM AND CONDITION (COLLAPSED ACROSS STUDY 3–4) ON BELIEFS (COLLAPSED ACROSS VALID AND DUBIOUS TACTICS)



NOTE.—Framings decreasing salience of consumers' intentions to cope with persuasion are the Third-person condition (study 3) and Abstract condition (study 4); framings increasing salience of consumers' intentions to cope with persuasion are the First-person condition (study 3) and Concrete condition (study 4).

STUDY 5: SENSE-MAKING MOTIVATIONS VERSUS ABILITIES

So far, we have been examining how differences in *motivation* to seek structure and intentions impact beliefs about marketing manipulation. But consumers may be motivated to do something without being skilled at it: Motivations and abilities may sometimes diverge (Kunda 1990; Wechsler 1950). Individuals can differ in their structure-seeking drive, measured by self-report scales (Cacioppo and Petty 1982; Neuberg and Newsom 1993; Webster and Kruglanski 1994) and cognitive abilities, measured by various intelligence tasks (Kaufman 2009). Likewise, although some studies have looked at mentalizing motivations (Baron-Cohen and Wheelwright 2004; Fonagy et al. 2016), more commonly researchers have

studied mentalizing abilities (Baron-Cohen 1995; Corcoran, Mercer, and Frith 1995; Goldstein, Wu, and Winner 2010).

Our framework is about motivations: It is the *drive* to understand events and others that is responsible for false-positive detection of persuasion in the marketplace and beliefs about manipulation. Therefore, our SMM scale consisting of two subscales—Need for Structure (NFS) and Need for Mentalizing (NFM)—measures two motivations that correspond to abilities, measured by Raven's Progressive Matrices (RPM) and Mind in the Eyes Test (MITE), respectively. We expect these *abilities*, in opposite, to manifest in greater accuracy of persuasion detection (hypothesis 2), as intelligence and mentalizing skills are generally associated with less propensity to detect illusory structures (Pennycook et al. 2012; Swami et al. 2014). This study examines the relationship between consumers' structure-seeking and mentalizing abilities and motivations, and their effects on manipulation beliefs.

Method

Participants. We recruited 400 participants (M_{age} = 40.8, 59.4% female). Participants (N = 60) were excluded for missing data or errors on attention checks.

Procedure. The procedure was similar to study 1b, except that before the main task participants solved one of two tests of their cognitive abilities. In one condition, they solved a test of objective mentalizing abilities (Mind in the Eyes Test [MITE]; Baron-Cohen et al. 2001), and in the other condition, they solved a test of objective pattern-detection abilities or fluid intelligence (Raven's Progressive Matrices [RPM]; Raven 1938). The MITE task consisted of 7 questions testing participants' ability to identify what emotion is portrayed in a black and white picture of a human's eyes and select the most appropriate of the four offered

options. The RPM task consisted of 7 questions testing participants' ability to fill in the missing piece in a visual geometric design and select a proper option of the choices provided.

Results and Discussion

First, we tested how strongly ability and motivation are linked for mentalizing and structure-seeking subscales within SMM. Very weakly indeed: NFM and MITE scores were not significantly correlated ($r(178) = .08$, $p = .270$), nor were NFS and RPM scores ($r(158) = .08$, $p = .305$).

Second, we tested whether mentalizing and sense-making *abilities* predict manipulation beliefs in the same way as motivations (hypothesis 2). The effect was the opposite: Abilities task scores had a significant *negative* effect on beliefs for dubious tactics ($b = –0.25$, $SE = 0.08$, $p = .003$). Specifically, mentalizing abilities measured by MITE lowered beliefs for dubious tactics ($b = –0.27$, $SD = 0.12$, $p = .026$), as did sense-making abilities measured by RPM ($b = –0.23$, SE = 0.12, p = .050). We did not find such effect for valid tactics ($ps > .537$): This means that abilities lead to a reduction in false-positives but not true-positives (hence greater accuracy) in persuasion detection. Thus, whereas strong motivations to seek patterns and intentions lead to greater false persuasion detection, strong abilities manifest in greater accuracy, as predicted.

Third, we tested whether we could replicate results in the previous studies and find support to our prediction that SMM affect beliefs about marketing manipulation. Collapsing across condition, SMM predicted beliefs for valid ($b = 0.61$, $SE = 0.12$, $p < .001$) and marginally for dubious ($b = 0.38$, $SE = 0.22$, $p = .077$) tactics. This broadly replicates the results in the previous studies and supports our main hypotheses (1a and 1b). (See web appendix C for regression results with NFS and NFM predicting manipulation beliefs.)

We included the MITE versus RPM manipulation *before* the main task because we speculated that the MITE task might prime participants to mentalize more, which could lead to higher false-positives for the dubious tactics. Consistent with that conjecture, there was a significant interaction between condition and SMM on beliefs for dubious ($F(1, 336) = 4.97$, $p = .027$, $\eta^2 = .01$) but not valid ($F(1, 336) = 1.21$, $p = .272$, $\eta^2 < .01$) tactics: After solving the MITE task, prompting more mentalizing, participants higher in SMM had much stronger beliefs in the power of dubious tactics ($b = 0.84$, $SE = 0.30$, $p = .005$), whereas we did not see this effect after RPM task ($b = –0.12$, $SD = 0.31$, $p = .700$). However, the result should be replicated before stronger conclusions are drawn. (See web appendix D for additional findings with MITE and RPM scores.)

The results of study 5 were consistent with our main hypotheses that SMM drives consumers' manipulation beliefs. Moreover, this study demonstrated that sense-making and mentalizing motivations are different from similar cognitive abilities: Whereas higher motivations increase false-positive beliefs about dubious manipulation tactics, higher cognitive and mentalizing abilities actually decrease these false-positives.

INTERNAL META-ANALYSIS OF MAIN EFFECTS (HYPOTHESES 1A AND 1B)

To increase the precision of the estimates and gain clarity around points where the study results were inconsistent, we conducted a meta-analysis ($N = 1,333$) of all studies (except study 1a because it measured prevalence beliefs, whereas all other studies measured effectiveness beliefs about marketing manipulation) using the lme4 package in R (Bates et al. 2015). Data were analyzed using mixed effects models with SMM as a fixed factor, random intercepts for studies (1b–5), participants, and items, and manipulation beliefs as the

dependent variable. (A table with individual studies' regression results is available in web appendix C.)

Overall, SMM was significantly associated with manipulation beliefs for both valid (b = 0.48, SE = 0.07, p < .001) and dubious (b = 0.41, SE = 0.10, p < .001) tactics. (Also, see web appendix E for results of mixed effects logistic regression where SMM explains true-positive and false-negative detection of valid tactics' effectiveness. It also explains true-negative and false-positive detection of dubious tactics' effectiveness—all findings are consistent with hypotheses 1a and 1b.)

The meta-analysis also allowed us to test demographic predictors of manipulation beliefs, collapsing across valid and dubious tactics. The effect of gender on manipulation beliefs was significant (b = 0.10, SE = 0.04, p = .006), where females had higher beliefs. Using PROCESS (Model 4; Hayes 2013) with study as a covariate (dummy-coded), we found that the effect of gender is mediated by SMM (b = 0.05, 95% CI: 0.032 to 0.072), because women have higher SMM (b = 0.06, SE = 0.003, p < .001). This finding is consistent with existing literature on sex differences in mentalizing (Baron-Cohen and Wheelwright 2004; Carroll and Chiew 2006), where women demonstrate higher motivation to understand others, and in cognitive persistence (Tanaka, Panter, and Winborne 1988), where women show more motivation to apply effort to overcome mental challenges.

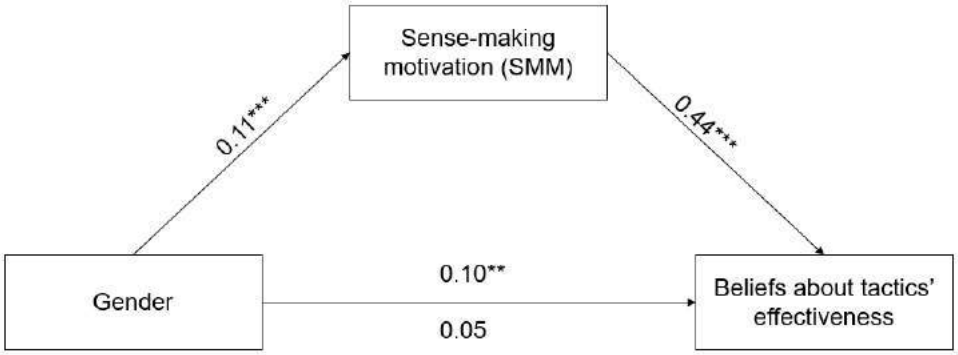
Age negatively predicted manipulation beliefs (b = –0.009, SE = 0.003, p < .001), such that younger consumers were more prone to believe in the effectiveness of marketing tactics. The effect of age was partially mediated by SMM (b = –0.001, 95% CI: –0.002 to –0.000), where younger consumers had higher SMM (b = –0.004, SE = 0.001, p < .001).

FIGURE 7

MEDIATION MODELS OF BELIEFS COLLAPSED ACROSS VALID AND DUBIOUS TACTICS FROM GENDER (A) AND AGE (B) VIA SMM FROM THE INTERNAL META-ANALYSIS

A

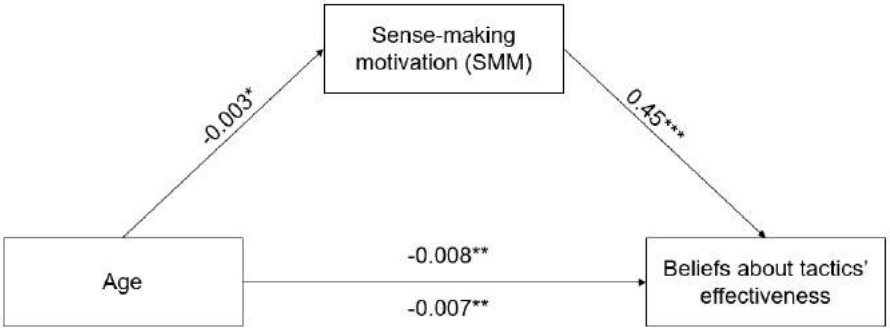
95% CI on indirect path: 0.032 to 0.072



NOTE.—Gender was contrast coded: "–1" for men, "1" for women.
*p < .05; **p < .01; ***p < .001

B

95% CI on indirect path: –0.002 to –0.00003



*p < .05; **p < .01; ***p < .001

GENERAL DISCUSSION

There is a widespread perception that marketers manipulate consumers. Numerous trade books (Bullock 2004; Kilbourne 1999; Packard 1985) and a growing number of posts throughout the Internet (Gatignon 2016; Oldford 2018) warn consumers about marketing manipulations. For example, the "Dark Side of Subliminal Advertising" blog (darksidesubliminal.blogspot.com) catalogues numerous alleged examples of subliminal messages in food and drink advertising. A particularly intriguing post analyzes a Johnnie Walker ad, depicting a glass filled with six ice cubes, rendered in black and white. The author sees a dog in one ice cube, the Creature from the Black Lagoon in a second cube, a panda with an ace of spades above its head in a third cube, and a (photo-negative) man screaming in a fourth cube. It turns out that this represents "a glimpse into a heavy drinker's hellish nightmare." After all, the dog is a Scottish terrier (symbolizing the land of scotch whiskey) and the ace of spades is a symbol of death. A mystery wrapped in a riddle inside an enigma! One might question why alcohol advertisers want to emphasize the nightmare of alcoholism, but luckily the blog's commenters offer further dissection: "Very complex and deep mind procedures are involved and scientists have discovered them only after decades of studies and experiments."

What explains such fanciful beliefs about the power of marketing? In this article, we introduced a theoretical framework for understanding when and why some consumers are prone to both correctly and erroneously detecting marketing manipulation. It posits that beliefs about marketing manipulations rest on the balance between beliefs about marketers' intentions to persuade and consumers' intentions to cope with persuasion, and that this balance depends on individual differences and situational framings. We found that those who have a natural drive to make sense of phenomena (both in general and for intention-seeking

in particular) tend to have higher manipulation beliefs. This applies both to true-positive (hypothesis 1a) and false-positive (hypothesis 1b) manipulation detection. We also found that abilities to solve intellectual and mentalizing tasks can, conversely, significantly lower beliefs about manipulation (hypothesis 2).

This model not only helps identify *who* might have pronounced beliefs about marketing manipulations, but also *how* to combat such false-positive beliefs. The key is making salient consumers' intentions to cope with persuasion. This is achieved by making them think of persuasion from their own perspective (hypothesis 3), or in more concrete terms (hypothesis 4). However, for consumers particularly high in sense-making motivation, these framings are reduced in effectiveness because such consumers are naturally more attuned to threats (hypothesis 5).

Theoretical Contributions

This research has shown that consumers access their persuasion knowledge not only in situations of true-persuasion, but also when there is no persuasion taking place. In addition to persuasion knowledge, our research contributes to several other conversations.

Individual differences linked to manipulation beliefs. To our knowledge, this research is the first to empirically show the connection between beliefs in manipulation and the core cognitive mechanisms. We also identified several other individual differences that play a role in true-positive and false-positive manipulation detection, having both theoretical and practical implications.

First, we found that beliefs about marketing manipulation are closely connected to consumers' beliefs in conspiracies, where conspiracy ideation mediates the effect of SMM on manipulation beliefs. This shows that those who believe in conspiracies are likely to think

that companies can manipulate their customers. Previous research found that individual differences in sense-making indeed influence conspiracy beliefs (van Prooijen 2012; van Prooijen and van Dijk 2014). Future research should investigate what effect other predictors of conspiracy mentality have on marketing manipulation beliefs, such as schizotypy (Barron et al. 2014; Darwin, Neave, and Holmes 2011), paranoia and boredom proneness (Brotherton and Eser 2015), and narcissism and self-esteem (Cichocka, Marchlewska, and Golec de Zavala 2016).

Second, we found another factor responsible for formation of manipulation beliefs—consumers' beliefs about free will. Those who believe in greater controllability and responsibility of people over their own behavior (Bandura 1982, 2008; Monroe and Malle 2010; Stillman et al. 2011) make fewer false-positive errors in persuasion detection. This might be relevant to our framework; however, in our study we did not find a direct relation of free will beliefs to SMM (only to NFS and NFM subscales separately, see web appendix D), showing that it goes beyond our framework. This finding still contributes to the literature on free will in marketing (Baumeister et al. 2008; Wilson, Gaines, and Hill 2008).

Third, in addition to our main expectation that SMM can predict manipulation beliefs, we also speculated that motivations to understand one's own mental states and actions (meta-cognitive motivations) will have a similar effect on manipulation beliefs. The results showed that the desire to think and analyze own thoughts and behaviors correlates with the mentalizing subscale of SMM (Carruthers 2006, 2009; Wilson 2002) and has a similar predictive effect of manipulation beliefs, providing promising avenues for future research.

Finally, we found that some personality and demographic types can also affect manipulation beliefs. As such, conscientiousness negatively affects manipulation beliefs: Greater motivation to think carefully and systematically manifests in lower beliefs. Although not directly relevant to our framework, we found that personality traits and SMM together

play an important role in formation of such beliefs, where SMM is another psychological factor beyond traditional Big Five personality traits. This finding contributes to knowledge about how personality traits manifest in consumer behavior (Baumgartner 2002; He and Bond 2015; Matz et al. 2016). Meta-analysis of demographic factors showed that women have higher motivations to mentalize (Baron-Cohen and Wheelwright 2004) and, therefore, tend to have higher manipulation beliefs.

Lay theories of the marketplace and attitudes towards marketers. Consumers' beliefs about the marketplace are not always accurate. But as they influence consumers' attitudes towards firms and brands, it is critical to identify these beliefs. For instance, consumers' erroneous understanding of firms' cost structures lead to unrealistic attitudes toward price fairness (Bolton et al. 2003); and consumers' mistaken view that more profitable firms engage in fewer corporate social responsibility activities likely causes resentment toward the most profitable companies (Bhattacharjee et al. 2017). But consumers' lay theories of marketing manipulation are not well-understood, even though the feeling of manipulation leads to reactance (Brehm 1966), manifesting in decreased purchase intentions (Campbell 1995; Kirmani and Zhu 2007; Wentzel, Tomczak, and Herrmann 2010). Our research contributes to the literature on marketing attitudes (Gaski and Etzel 2005) not only by identifying what consumers are more prone to detect manipulations where they do or do not exist, but also by investigating ways to combat such perceptions.

Marketing Implications

Given increasing beliefs in marketing tricks among consumers (Isaac and Grayson 2017), companies need to use them very carefully. With the rise of neuromarketing, some consumers are worried that marketers know how to control and influence their choice

(Stanton, Sinnott-Armstrong, and Huettel 2016). As neuroscientific explanations of psychological phenomena undermine belief in free will (Greene and Cohen 2004), development of neuromarketing can create even more fear of marketing manipulation (Grey et al. 2003). In reality, most of these fears are exaggerated as they state that neuromarketing is more powerful than it practically is (Stanton et al. 2016).

For instance, the Cambridge Analytica scandal of 2018 and Facebook emotional contagion study set the Internet ablaze and caused a wave of raging comments in the social media (Cadwalladr 2018; Steadman 2014), although the effects of Facebook content on voting behavior (Chen and Potenza 2018; Trump 2018) and users' emotions (Kramer, Guillory, and Hancock 2014) were modest at best. Still, many users were worried about being manipulated and duped. Some left comments in the news articles related to the Facebook experiment: "Don't be fooled, manipulating a mood is the ability to manipulate a mind. Political outcomes, commerce, and civil unrest are just a short list of things that can be controlled." (Hallinan, Brubaker, and Fiesler 2019, 1084). These sentiments, however, do not necessarily lead to particular withdrawing behavior—indeed, people's privacy-related concerns and their behavior frequently contradict (Barnes 2006; Norberg, Horne, and Horne 2007). Arguably, the real lesson of Cambridge Analytica and the Facebook experiment was less that they affected users' *behavior*, but that they made users *think* that such manipulations have great power.

One general piece of advice for weakening manipulation beliefs based on our framework is increasing the salience of consumers' intentions to cope with persuasion relatively to the salience of marketers' intentions to persuade. This can be achieved by making consumers think about themselves in persuasion or by making them think about persuasion more concretely—this will make them aware of their persuasion coping strategies.

Our research also points to strategies for marketing segmentation separately to each demographic. Marketers should be particularly wary of any tactics that might be perceived as manipulative by consumer segments higher in SMM, whereas consumers lower on these traits can be more safely marketed to with less fear of perceived manipulation. This difference in sense-making needs might explain why some consumers detect a shady intent from marketers and politicians where there is none (as in the examples described above).

But how do we identify consumers with higher sense-making needs? Our findings suggest that SMM can be predicted by gender and age, where women and younger consumers have higher motivations to understand their environments, leading them to have higher manipulation beliefs overall. Thus, women and younger consumers should be encouraged to think more about consumers' side rather than about marketers' side in persuasion as this might help attenuate manipulation beliefs. At the same time, this presents opportunities for younger consumers to receive messages that educate them about the limits of marketing persuasion. More generally, research exploring how demographics interacts with beliefs about marketing manipulation may be of great practical significance.

The idea that persuasion is powerful is quite compelling—our world is full of persuasion. Pervasiveness of advertising makes many people think that it is influential—otherwise why would so many companies and politicians pay for advertising? In reality, each of us, including marketers and politicians, know that persuasion is extremely hard. Scholars find new evidence that the effects of commercial and political advertising on consumers' and voters' behavior are trivial and ephemeral (Coppock, Hill, and Vavreck 2020; Gerber et al. 2011; Krasno and Green 2008; Tellis 2003). Is it possible that this sector of the economy is to some extent based on a cognitive illusion? In this case, such *self-fulfilling prophecies* (Merton 1948) make many people hold unbacked beliefs about the power of marketing (and political)

persuasion not because it is effective but because it is pervasive. Such influence might not be effective at all, but it makes us *think* that it is powerful.

Whether pervasive or not, consumers resent the feeling of manipulation and firms must prune such attitudes at their roots. Understanding the depths of those roots, as we have done here, is valuable both for consumer research and for firms' bottom lines.

Limitations and Future Research

Although we argue that the support for our core hypotheses is robust, several limitations should be borne in mind for future research.

First, the tests of hypotheses 1a and 1b are mainly correlational—we measure rather than manipulate sense-making motivation. On the one hand, this is likely to be the most ecologically valid way of operationalizing these constructs, since there is little evidence that sense-making motivations fluctuate across situations. On the other hand, we did provide initial evidence in study 5 that priming mentalizing can increase the effect of SMM on beliefs. This adds experimental support to our framework, while also providing a springboard for future research, both in consumer behavior and on more basic processes.

Second, our empirical case is stronger for the basic effects of SMM (hypotheses 1a and 1b) than the supporting process evidence. Of course, SMM is itself a measure of cognitive processes and, therefore, our results are informative about psychological mechanisms. Moreover, we provide some mediation evidence toward understanding the intervening variables between motivation and beliefs, particularly persuasion knowledge access in study 4. The mediating effects of free will beliefs (documented in the web appendix) and broader conspiracy ideation, are also consistent with the logic embedded in our

theoretical framework. Nonetheless, more systematically understanding these mechanisms would be a valuable goal for future research.

Finally, it would be valuable to identify further boundary conditions. We did identify some theoretically relevant boundaries: Our situational and individual difference variables interact such that the situational framing effects do not occur for participants high in threat-detection (SMM), and we argue below how this is managerially relevant. And priming mentalizing in study 5 increased manipulation beliefs even beyond their already-high baseline among consumers high in SMM. Still, future work might examine other potential boundary conditions, such as priming. For instance, priming sense-making motivations with situations containing potential threats might increase manipulation beliefs, whereas priming free will beliefs might potentially decrease manipulation beliefs.

DATA COLLECTION INFORMATION

All the studies were conducted between Spring 2019 and Spring 2020 using the Amazon Mechanical Turk panel. All the studies were programmed using Qualtrics. Data collection was managed by the first and second authors. The first author performed the data analysis, with input from the second author. Data were discussed on multiple occasions by all authors.

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WEB APPENDIX

Web appendix consists of five parts: Appendix A (methodological details), Appendix B (scale items), Appendix C (main results details), Appendix D (other results details), and Appendix E (internal meta-analysis details). Raw data were submitted to repository with the following link: https://osf.io/b9tyw.

APPENDIX A

Methodological Details

Stimuli used in studies 1, 3 and 5

Valid tactics:

Jack says that many social networking websites are able to convince customers to buy many unnecessary goods that they otherwise would not buy, by psychologically targeting advertisements based on users' personal data (e.g., their search history).

Bob says that the lowest shelves in stores have the best deals, because retailers place the most expensive brands at eye level so that more consumers notice and buy them.

Mark says that stores sometimes make promotions time-limited just so that customers feel a greater sense of urgency to buy at the sale prices.

Julia says that stores sometimes redescribe a product bundle (e.g., "ice cream and a cookie for $3.00") as including a free product (e.g., "buy a $3.00 ice cream and get a free cookie") to make the offer sound more exciting to customers.

Christine says that in stores, salespeople pay compliments to customers before telling them about a particular product; this flatters the customers, so it is easier to sell them the product.

Jill says that sales prices are often misleading – retailers trick consumers by writing a second, much higher, price on the tag, cross this price out, and lead consumers to think that the "new price" is a good deal.

Dubious tactics:

Ellen says that door-to-door salespeople can use hypnotic words and body gestures to convince customers to buy things they do not really want.

Steven says that marketers expose viewers to hidden advertising before or during movies, aimed at unconsciously influencing viewers' attitudes and behavior.

Stimuli used in study 2

Valid tactics (the "true" versions as used in original studies):

1. Some researchers say that displaying healthy food items to the left of unhealthy food can promote healthier choices compared to displaying them to the right of unhealthy food items. In other words, they claim that it is possible to promote healthy eating by displaying food items like this:

To what extent do you agree that it is possible to promote healthier choices by displaying food items as shown above and not vice versa?

2. Some scholars say that for organized assortments of candies, more actual variety (more options available) increases consumption quantities to a greater degree than it does with disorganized assortments.

To what extent do you agree that people will consume more candies when they are organized compared to when they are disorganized?

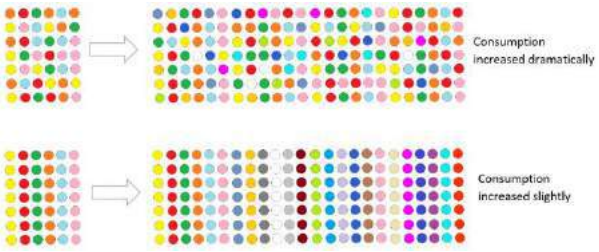
3. Some researchers claim that sellers can influence customers to choose a more expensive beer at a bar if the products are displayed from high to low (descending order)

Dubious tactics (the "false" versions (reversed)):

1. Some researchers say that displaying healthy food items to the right of unhealthy food can promote healthier choices compared to displaying them to the left of unhealthy food items. In other words, they claim that it is possible to promote healthy eating by displaying food items like this:

To what extent do you agree that it is possible to promote healthier choices by displaying food items as shown above and not vice versa?

2. Some scholars say that for disorganized assortments of candies, more actual variety (more options available) increases consumption quantities to a greater degree than it does with organized assortments.



To what extent do you agree that people will consume more candies when they are disorganized compared to when they are organized?

3. Some researchers claim that sellers can influence customers to choose a more expensive beer at a bar if the products are displayed from low to high (ascending order)

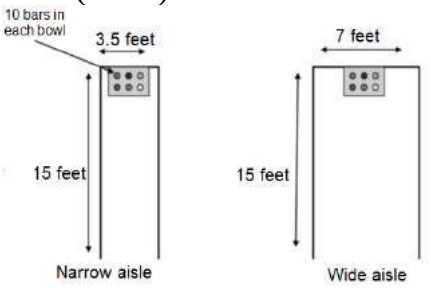
than from low to high (ascending order).

HIGH → LOW	
BEER 1	$10
BEER 2	$9
BEER 3	$8
BEER 4	$8
BEER 5	$7
BEER 6	$7
BEER 7	$7
BEER 8	$7
BEER 9	$6
BEER 10	$5
BEER 11	$4
BEER 12	$4
BEER 13	$4
AVG SALE	$6.02

LOW → HIGH	
BEER 1	$4
BEER 2	$4
BEER 3	$4
BEER 4	$5
BEER 5	$6
BEER 6	$7
BEER 7	$7
BEER 8	$7
BEER 9	$7
BEER 10	$8
BEER 11	$8
BEER 12	$9
BEER 13	$10
AVG SALE	$5.78

To what extent do you agree that displaying prices of beer from high to low is an effective tactic to increase revenue?

4. Some scholars asked a group of people to proceed down the aisle and choose three candy bars of any kind, in any combination they pleased. There were six different types of candy bars at the end of the aisle. When the aisle was narrow (3.5 feet), people tended to choose a greater variety of candy bars compared to when the aisle was wide (7 feet).



To what extent do you agree that making the aisle narrower is an effective way to influence customers to choose a greater variety of products?

5. Some scholars report the following results of their studies: when people were asked to choose a drink – either energy drink or iced tea – those who had been exposed to a very strong repulsive scent of grapefruit selected iced tea. Those people who had been exposed to a strong repulsive scent of lavender preferred the energy drink.

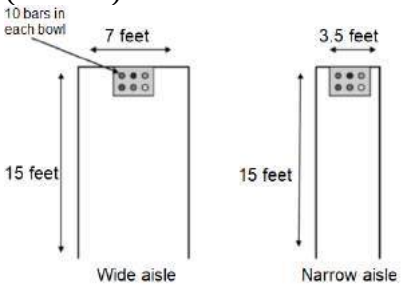
than from high to low (descending order).

LOW → HIGH	
BEER 1	$4
BEER 2	$4
BEER 3	$4
BEER 4	$5
BEER 5	$6
BEER 6	$7
BEER 7	$7
BEER 8	$7
BEER 9	$7
BEER 10	$8
BEER 11	$8
BEER 12	$9
BEER 13	$10
AVG SALE	$6.02

HIGH → LOW	
BEER 1	$10
BEER 2	$9
BEER 3	$8
BEER 4	$8
BEER 5	$7
BEER 6	$7
BEER 7	$7
BEER 8	$7
BEER 9	$6
BEER 10	$5
BEER 11	$4
BEER 12	$4
BEER 13	$4
AVG SALE	$5.78

To what extent do you agree that displaying prices of beer from low to high is an effective tactic to increase revenue?

4. Some scholars asked a group of people to proceed down the aisle and choose three candy bars of any kind, in any combination they pleased. There were six different types of candy bars at the end of the aisle. When the aisle was wide (7 feet), people tended to choose a greater variety of candy bars compared to when the aisle was narrow (3.5 feet).



To what extent do you agree that making the aisle wider is an effective way to influence customers to choose a greater variety of products?

5. Some scholars report the following results of their studies: when people were asked to choose a drink – either energy drink or iced tea – those who had been exposed to a very strong repulsive scent of lavender selected iced tea. Those people who had been exposed to a strong repulsive scent of grapefruit preferred the energy drink.

To what extent do you agree that such scent manipulation can affect people's choice as described?

6. Some researchers found that a car rental company managed to increase the number of members in their loyalty reward program after they changed the reward from a *$70 credit toward a future grocery bill at the local grocery store* to a *1-hour pampering Swedish massage*.

To what extent do you agree that the described tactic can be effective for increasing number of members in a loyalty program?

7. Some researchers found that male customers perceive greater savings when prices are displayed in red (compared to black).

To what extent do you agree that displaying prices in red is effective for increasing sales among men?

8. Some researchers showed people two lamps on a computer screen, one on the left and the other on the right. These people were asked to estimate the price of each lamp within a range of $20–$25.

To what extent do you agree that such scent manipulation can affect people's choice as described?

6. Some researchers say that a car rental company managed to increase the number of members in their loyalty reward program after they changed the reward from *a 1-hour pampering Swedish massage to a $70 credit toward a future grocery bill at the local grocery store*.

To what extent do you agree that the described tactic can be effective for increasing number of members in a loyalty program?

7. Some researchers found that male customers perceive greater savings when prices are displayed in black (compared to red).

To what extent do you agree that displaying prices in black is effective for increasing sales among men?

8. Some researchers showed people two lamps on a computer screen, one on the left and the other on the right. These people were asked to estimate the price of each lamp within a range of $20–$25.

People assigned a higher price to the lamp on the right-hand side of the screen than for the lamp on the left-hand side. This effect was not dependent on the type of lamp.

To what extent do you agree that people will perceive object on the right as more expensive than object on the left as described above?

People assigned a higher price to the lamp on the left-hand side of the screen than for the lamp on the right-hand side. This effect was not dependent on the type of lamp.

To what extent do you agree that people will perceive object on the left as more expensive than object on the right as described above?

Stimuli used in study 4

Abstract vignettes:

Social networks websites often use targeted advertising, a form of online advertising that is directed towards audiences based on their recent purchase and search history. This practice is able to convince customers to buy various goods that they otherwise would not buy by targeting advertisements based on their personal data.

Some companies use techniques aimed at unconsciously influencing viewers' attitudes and behavior without their being aware. This may involve the use of hidden ads that affect the audience at a level below conscious awareness.

Door-to-door salespeople sometimes use hypnotic words and body gestures to convince customers to buy things they do not really want.

Advertisers often appeal to customers' desire to "get a deal" by writing two prices on a tag – original price (which is often crossed out) and a new, sale price. This makes the offered price seem more attractive, when in fact there is no sale discount.

The lowest shelves in stores have the best deals, because retailers place the most expensive brands at customers' eye level. Companies know that shoppers look at the

Concrete vignettes:

Jello!, a social networking website, places ads on the sides of users' pages that change based on their recent purchase and search history. This practice is able to convince customers to buy various goods that they otherwise would not buy – from home appliances and apparel to electronic gadgets and eyewear – by targeting advertisements based on their personal data.

Bell Electronics uses techniques aimed at unconsciously influencing viewers' attitudes and behavior without their being aware. They place hidden advertising of their products before or during movies that affect the audience at a level below conscious awareness.

Door-to-door salesperson of Morning's Sunshine uses specific hypnotic words and body gestures to convince customers to buy vitamins and dietary supplements that they do not really want.

Tu Apparel often appeal to customers' desire to "get a deal" by writing two prices on a tag for their jeans – original price (which is often crossed out) and a new, sale price. This makes the offered price on their jeans seem more attractive, when in fact there was no sale discount.

The lowest shelves of breakfast cereals in Fresco Foods have the best deals, because retailers place the most expensive brands at eye level. Fresco Foods managers know that

brands positioned at eye level shelves more often than at those placed below.

Time-limited offers are those where a pricing offer is only available for a specified, usually short, period of time, so that customers feel a greater sense of urgency to buy at the discounted price.

Stores sometimes redescribe their usual product bundles ("Product X and product Y for $3.00") as including a free product ("buy Product X for $3.00 and get product Y for free") to make the offer sound more exciting to customers.

In stores, salespeople often pay compliments to customers before telling them about a particular product; this flatters the customers, so it is easier to sell them the product.

shoppers look at the brands positioned at eye level shelves more often than at those placed below.

Happy Baby Clothes often advertises time-limited offers that are only available for a specified, usually short, period of time, so that customers feel a greater sense of urgency to buy their products at the discounted price.

Donuts & Waffles sometimes redescribe their usual product bundle (e.g., “ice cream and a cookie for $3.00") as including a free product (e.g., “buy a $3.00 ice cream and get a free cookie”) to make the offer sound more exciting to customers.

At Jason & Partners, salespeople pay compliments to customers before telling them about a new perfume or facial cream; this flatters the customers, so it is easier to sell them the product.

APPENDIX B

Scale Items

Sense-Making Motivation (SMM) Scale

In studies 1a–1b we used the following scales to create our SMM scale. Motivation to seek structures (*need for structure*; NFS) was measured by 3 questions from the Personal Need for Structure Scale (Neuberg and Newsom 1993; Thompson, Naccarato, and Parker 1989, 1992) and 1 question from the Need for Cognitive Closure Scale (Kruglanski, Webster, and Klem 1993). Motivation to understand others (*need for mentalizing*; NFM) was measured by 4 questions from the Interpersonal Reactivity Index (Davis 1983) and 2 questions from the Reflective Functioning Questionnaire (Fonagy et al. 2016).

In studies 2–5, we substituted the Need for Cognitive Closure question by the two questions from the Intolerance of Uncertainty scale (Freeston et al. 1994) in an attempt to increase reliability (see Cronbach alphas in table B1 below).

NFS Subscale (studies 1a–1b):

Need for Structure:
I enjoy having a clear and structured mode of life.
I don't like situations that are uncertain.
I become uncomfortable when the rules in a situation are not clear.
Need for Cognitive Closure:
I feel uncomfortable when someone's meaning or intention is unclear to me.

NFS Subscale (studies 2–5):

Need for Structure:
I enjoy having a clear and structured mode of life.
I don't like situations that are uncertain.
I become uncomfortable when the rules in a situation are not clear.
Uncertainty Intolerance:
My mind can’t be relaxed if I don’t know what will happen tomorrow.
Uncertainty makes me uneasy, anxious, or stressed.

NFM Subscale (studies 1–5):

Perspective-Taking:
Before criticizing somebody, I try to imagine how I would feel if I were in their place.
I sometimes try to understand my friends better by imagining how things look from their perspective.
I believe that there are two sides to every question and try to look at them both.
I try to look at everybody's side of a disagreement before I make a decision.
Reflective Functioning:
I believe that people can see a situation very differently based on their own beliefs and experiences.

TABLE B1

ITEM LOADINGS FOR TWO-FACTOR SENSE-MAKING MOTIVATION SCALE

Item Loadings for two-factor model	Original Scale/Subscale	Study 1 (N=254)	Study 2 (N=162)	Study 3 (N=357)	Study 4 (N=350)	Study 5 (N=340)
Factor 1: Need for Structure (NFS)						
I enjoy having a clear and structured mode of life.	"Personal Need for Structure"	.591	.623	.605	.717	.598
I don't like situations that are uncertain	"Personal Need for Structure"	.851	.877	.864	.867	.880
I become uncomfortable when the rules in a situation are not clear.	"Personal Need for Structure"	.890	.840	.828	.823	.835
I feel uncomfortable when someone's meaning or intention is unclear to me.	"Need for Cognitive Closure"	.749				
My mind can't be relaxed if I don't know what will happen tomorrow.	"Intolerance of Uncertainty"		.783	.762	.729	.717
Uncertainty makes me uneasy, anxious, orstressed.	"Intolerance of Uncertainty"		.888	.856	.845	.858
Factor 2: Need for Mentalizing (NFM)						
Before criticizing somebody, I try to imagine how I would feel if I were in their place.	"Perspective-taking"	.820	.801	.820	.755	.807
I sometimes try to understand my friends better by imagining how things look from their perspective.	"Perspective-taking"	.804	.836	.825	.831	.811
I believe that there are two sides to every question and try to look at them both.	"Perspective-taking"	.679	.745	.819	.809	.774
I try to look at everybody's side of a disagreement before I make a decision.	"Perspective-taking"	.813	.826	.817	.860	.851
I believe that people can see a situation very differently based on their own beliefs and experiences.	"Reflective Functioning Questionnaire"	.628	.644	.569	.610	.489
KMO (SMM)		.777	.801	.793	.797	.768
Cronbach alphas						
Total scale (SMM)		.737	.762	.744	.766	.738
NFS		.784	.866	.845	.855	.843
NFM		.810	.830	.835	.835	.813

NOTE.—Extraction Method: Principal Component Analysis with Varimax rotation and Kaiser normalization. Questions in all studies fall into two components—NFS and NFM—based on eigenvalues.

Metacognitive Motivations Scale (study 3)

This scale was created using items adapted from the Reflective Functioning Questionnaire (Fonagy et al. 2016).

I always know what I feel.
I like to think about the reasons behind my actions.
I always know why I do what I do.
I enjoy thinking about my own thoughts.
I think I understand myself better than other people understand themselves.

Questions Measuring Persuasion Knowledge Access (study 4)

In study 4, we used the following questions measuring the extent to which participants were thinking about marketers' and customers' side after reading main task:

When you answered the questions about marketing techniques on the previous screens, how much were you *thinking about these actions from the perspective of the company*?
When you answered the questions about marketing techniques on the previous screens, how much were you *thinking about these actions from the perspective of the customers*?
When you answered the questions about marketing techniques on the previous screens, how much were you *thinking about the reasons why companies do it*?
When you answered the questions about marketing techniques on the previous screens, how much did you *think that the companies' actions were intentional*?

Free Will Beliefs Scale (study 4)

This scale was created using items adapted from the FAD-Plus Scale (Paulhus and Carey 2011) and Lay Dispositionism Scale (Chiu, Hong, and Dweck 1997; Yeager et al. 2011). The beliefs were measured on a 5-point scale. Higher scores correspond to higher belief in free will and controllability over traits and behavior.

Other people can easily change the kind of person they are.
The kind of person someone is is something very basic about them and it can't be changed very much.*
People can do things differently, but the important parts of who they are can't really be changed.*
Everyone is a certain kind of person and there is not much that can be done to really change that.*
People have complete control over the decisions they make.
People have complete free will.
People's biological makeup determines their talents and personality.*
Your genes determine your future.*
Science has shown how your past environment created your current intelligence and personality.*
No matter how hard you try, you can't change your destiny.*

Whatever will be, will be—there's not much you can do about it.*

*Reverse coded items

APPENDIX C

Main Results Details: Regressions, Mean Responses, and Spotlight Analyses

Regression results (studies 1–5)

TABLE C1

THE EFFECT OF SMM ON BELIEFS ABOUT EFFECTIVENESS (OR PREVALENCE IN STUDY 1A) OF VALID TACTICS

	b	SE	t	p
Study 1a	0.54	0.17	3.12	0.002
Study 1b	0.64	0.20	3.27	0.001
Study 2	0.50	0.22	2.23	0.027
Study 3	0.42	0.15	2.87	0.004
Study 4	0.35	0.11	3.12	0.002
Study 5	0.61	0.12	5.30	<0.001

TABLE C2

THE EFFECT OF SMM ON BELIEFS ABOUT EFFECTIVENESS (OR PREVALENCE IN STUDY 1A) OF DUBIOUS TACTICS

	b	SE	t	p
Study 1a	0.83	0.32	2.56	0.012
Study 1b	0.19	0.35	0.54	0.590
Study 2	0.43	0.23	1.92	0.057
Study 3	0.59	0.22	2.64	0.009
Study 4	0.29	0.20	1.44	0.151
Study 5	0.38	0.22	1.77	0.077

TABLE C3

THE EFFECT OF NFS AND NFM SUBSCALES ON BELIEFS ABOUT EFFECTIVENESS (OR PREVALENCE IN STUDY 1A) OF VALID TACTICS

		b	SE	t	p
Study 1a	NFS	0.06	0.11	0.57	0.571
	NFM	0.61	0.15	3.99	<0.001
Study 1b	NFS	0.25	0.14	1.84	0.068
	NFM	0.40	0.15	2.68	0.008
Study 2	NFS	0.13	0.13	0.94	0.347
	NFM	0.50	0.19	2.58	0.011
Study 3	NFS	0.19	0.09	2.00	0.046
	NFM	0.24	0.12	2.09	0.037
Study 4	NFS	0.05	0.07	0.65	0.516
	NFM	0.41	0.10	4.29	<0.001
Study 5	NFS	0.33	0.07	4.47	<0.001
	NFM	0.26	0.09	2.93	0.004

TABLE C4

THE EFFECT OF NFS AND NFM SUBSCALES ON BELIEFS ABOUT EFFECTIVENESS (OR PREVALENCE IN STUDY 1A) OF DUBIOUS TACTICS

		b	SE	t	p
Study 1a	NFS	0.16	0.22	0.74	0.458
	NFM	0.84	0.29	2.86	0.005
Study 1b	NFS	-0.26	0.24	-1.07	0.288
	NFM	0.51	0.26	1.95	0.053
Study 2	NFS	0.02	0.13	0.14	0.887
	NFM	0.64	0.20	3.23	0.002
Study 3	NFS	0.32	0.14	2.28	0.023
	NFM	0.25	0.18	1.40	0.163
Study 4	NFS	0.14	0.13	1.05	0.293
	NFM	0.17	0.17	0.95	0.344
Study 5	NFS	0.09	0.14	0.67	0.504
	NFM	0.34	0.17	1.99	0.048

TABLE C5

MEAN RESPONSES (SD) FOR BELIEFS FOR EACH TACTIC ACROSS STUDIES 1, 3–5

	Study 1a	Study 1b	Study 3		Study 4		Study 5
			First-person	Third-person	Conc-rete	Abs-tract	
Targeted advertising in social media	3.47 (1.80)	2.61 (1.93)	0.86 (2.78)	1.87 (2.09)	1.24 (2.11)	1.82 (2.32)	2.66 (2.03)
Most expensive products at the eye level on the shelves in stores	2.95 (2.14)	2.70 (2.08)	1.91 (2.25)	1.89 (2.20)	2.37 (1.97)	2.61 (1.94)	2.76 (1.98)
Time-limited promotions	4.01 (1.54)	3.54 (1.31)	2.45 (2.15)	2.74 (1.67)	2.34 (1.77)	3.07 (1.57)	3.62 (1.26)
Redescribing a product bundle (e.g. “ice cream and a cookie for $3.00") as including a free product (e.g., “buy a $3.00 ice cream and get a free cookie”)	3.85 (1.27)	3.12 (1.52)	2.23 (2.06)	2.56 (1.62)	2.30 (1.69)	2.89 (1.70)	3.13 (1.65)
Compliments to customers from salespeople in stores	2.72 (2.02)	1.91 (2.19)	0.39 (2.77)	1.08 (2.22)	1.62 (2.06)	1.59 (2.24)	2.09 (2.12)
The “new price” is a good deal (“retailers write a second, much higher, price on the tag, and cross it out”)	2.96 (2.44)	2.77 (1.89)	1.54 (2.66)	2.10 (2.02)	2.16 (2.10)	2.60 (1.96)	2.84 (1.92)
Hypnotic words and body gestures from door-to-door salespeople	-0.32 (3.05)	-0.86 (2.83)	-1.64 (2.81)	-0.95 (2.59)	-1.14 (2.54)	-0.79 (2.53)	-0.52 (2.80)
Subliminal advertising in the movies	2.22 (2.28)	1.52 (2.29)	0.45 (2.57)	0.71 (2.58)	0.55 (2.42)	1.45 (2.38)	1.54 (2.47)

NOTE.—Beliefs were measured on a scale from (–5) “strongly disagree” to (5) “strongly agree”.
All studies except 1a measured effectiveness of the tactics beliefs; study 1a measured prevalence of the tactics beliefs.

TABLE C6

MEAN RESPONSES (SD) FOR BELIEFS FOR EACH TACTIC ACROSS STUDY 2

	Valid (as in original publication)	Dubious (reversed version)
Displaying healthy food items relatively to unhealthy food items	0.43 (2.84)	0.89 (2.38)
Variety in organized and disorganized assortments of candies	2.02 (2.21)	1.53 (2.29)
Ascending or descending price and beer consumption	1.47 (2.48)	1.50 (2.08)
Aisle width and product variety	0.42 (2.50)	1.06 (2.12)
Scents and drink preference	1.08 (2.22)	1.49 (2.59)
Loyalty program rewards	0.09 (2.70)	3.08 (2.05)
Prices displayed in red vs. black	1.95 (2.35)	-0.27 (2.82)
Position of the lamp and its price	0.84 (2.56)	0.09 (2.77)

NOTE.—Beliefs were measured using a scale from (–5) “strongly disagree” to (5) “strongly agree”.

Spotlight Analyses Results for Interactions in studies 3–4

TABLE C7

SPOTLIGHT ANALYSIS FOR VALID TACTICS BELIEFS PREDICTED BY SMM IN STUDIES 3–4

	Study 3				Study 4			
SMM	Effect	SE	t	p	Effect	SE	t	p
–1 SD	-0.29	0.11	-2.55	0.011	-0.34	0.09	-3.87	<0.001
0	-0.22	0.08	-2.75	0.006	-0.22	0.06	-3.53	<0.001
+1 SD	-0.15	0.11	-1.33	0.186	-0.10	0.09	-1.12	0.265
	Interaction Significance: $p = 0.392$				Interaction Significance: $p = 0.054$			

TABLE C8

SPOTLIGHT ANALYSIS FOR DUBIOUS TACTICS BELIEFS PREDICTED BY SMM IN STUDIES 3–4

	Study 3				Study 4			
SMM	Effect	SE	t	p	Effect	SE	t	p
–1 SD	-0.43	0.17	-2.53	0.012	-0.43	0.15	-2.74	0.007
0	-0.21	0.12	-1.70	0.091	-0.32	0.11	-2.82	0.005
+1 SD	0.02	0.17	0.13	0.896	-0.20	0.16	-1.24	0.215
	Interaction Significance: $p = 0.062$				Interaction Significance: $p = 0.294$			

TABLE C9

SPOTLIGHT ANALYSIS FOR VALID AND DUBIOUS TACTICS BELIEFS PREDICTED BY METACOGNITIVE MOTIVATIONS IN STUDY 3

Metacognitive motivations	DV: Valid tactics beliefs				DV: Dubious tactics beliefs			
	Effect	SE	t	p	Effect	SE	t	p
–1 SD	0.27	0.11	-2.45	.015	-0.45	0.17	-2.62	.009
0	0.23	0.08	-2.90	.004	-0.22	0.12	-1.86	.064
+1 SD	0.19	0.11	-1.65	.099	0.00	0.17	0.00	.997
Interaction Significance: p = 0.574					Interaction Significance: p = 0.066			

APPENDIX D

Other Results Details

Study 2: Big Five Personality Traits' Prediction of Tactics' Effectiveness Beliefs

Regression analysis of Big Five Personality Traits with SMM as a covariate showed that Conscientiousness had a significant negative effect on marketing manipulation beliefs (collapsed across valid and dubious): $b = –0.32$, $SE = 0.16$, $p = .050$. This makes sense: Conscientiousness is manifested in characteristic behaviors such as being neat, systematic, careful, thorough and thinking carefully before acting (Costa and McCrae 1992; Thompson 2008). Since critical thinking requires motivation and effort to reason whether a proposition is true or false (Sperber et al. 2010), greater conscientiousness leads to lower belief in marketing manipulation. Other personality traits defined by Big Five did not have a significant effect on beliefs, ps > .111.

Study 3: Metacognitive Motivations' Prediction of Tactics' Effectiveness Beliefs

In study 3, we tested what role metacognitive motivations play in formation of manipulation beliefs. We speculated that motivations to think about one's own mental states (e.g., beliefs, feelings) and actions might have the same effect on beliefs about tactics' effectiveness as the NFM subscale of SMM, because thinking about oneself is thought to rely on similar cognitive mechanisms as thinking about others (Carruthers 2006, 2009).

The desire to think about one's own mental states significantly predicted both valid ($b = 0.26$, $SE = 0.11$, $p = .020$) and dubious ($b = 0.36$, $SE = 0.17$ $p = .032$) tactics beliefs. Moreover, metacognitive motivations moderated the effect of condition in study 2 (first-person vs. third-person framing) on dubious tactics beliefs at marginal significance ($F(1, 353) = 3.41$, $p = .066$, $\eta^2 = .01$), but not on valid tactics beliefs (F (1, 353) = 0.32, $p = .574$, $\eta^2 = .01$).

Despite the fact that the moderation is not significant for valid tactics, and only marginally significant for dubious tactics, the spotlight analysis revealed that the effect of the first-person perspective can significantly reduce both valid and dubious tactics beliefs only in consumers with lower metacognitive motivations. The effect is not significant for consumers with higher metacognitive drives (table C9). This means that the first-person framing can reduce manipulation beliefs only in consumers with lower motivations to think about own mental states and behavior; in consumers with higher metacognitive motivations this framing is not helpful in decreasing manipulation beliefs. Therefore, they are more likely to detect manipulations even when they do not exist. This is directionally consistent with our other findings, although not as statistically robust.

Metacognitive motivations correlate with SMM ($r(355) = .28$, $p < .001$), but mainly because it correlates with the NFM subscale ($r(355) = .39$, $p < .001$), and not NFS subscale ($r(355) = .04$, $p = .381$). This finding is consistent with the idea that mentalizing about oneself highly correlates with mentalizing about others (e.g., Carruthers 2006, 2009; Wilson 2002). Overall, these results are in line with our main predictions about SMM (hypotheses 1a and 1b). (Please see the spotlight analyses separately in appendix C.)

Study 4: Free Will Beliefs' Prediction of Tactics' Effectiveness Beliefs

This study allowed us to test whether manipulation beliefs can be predicted by beliefs about free will. We speculated that consumers higher on the scale might believe in greater controllability over one's own actions to cope with persuasion (Bandura 1982, 2008; Monroe and Malle 2010; Stillman, Baumeister, and Mele 2011), and might therefore show lower belief in manipulation. Free will beliefs did not have significant effect on manipulation beliefs for valid tactics (b = 0.05, SE = 0.10, p = .594), but did have a significant negative effect on beliefs for dubious tactics (b = –0.43, SE = 0.17, p = .012), where more deterministic consumers evaluated dubious persuasion as more effective than consumers higher in free will beliefs. This is consistent with the proposition that people who think that their actions are determined and, therefore, little can be done to control situations' outcomes, think that persuasion tactics (even dubious ones) are effective.

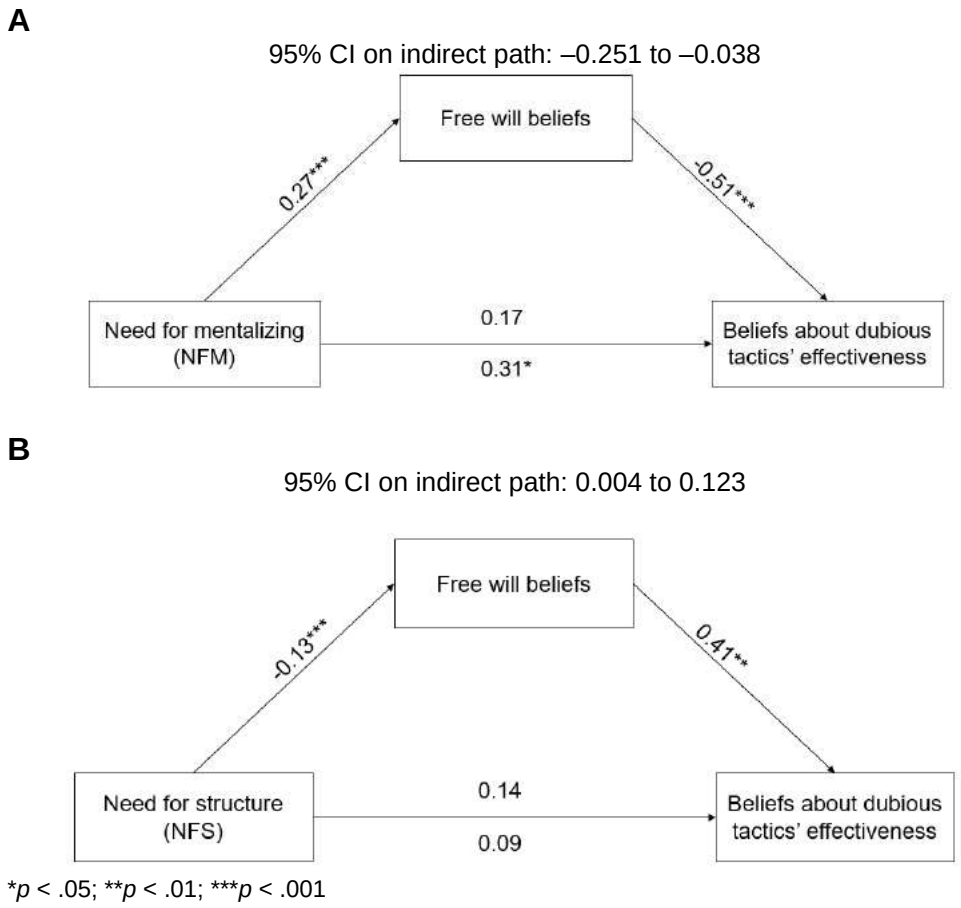
Based on prior literature, one could think that the free will beliefs should interact with condition, where the effect of concrete versus abstract is smaller for consumers high in determinism as in Nichols and Knobe (2007). However, in their studies, Nichols and Knobe measured beliefs about free will of characters in particular situations, whereas we measured more general free will beliefs that did not refer to our specific vignettes. Therefore, we did not expect (nor did we find, ps > .476) an interaction effect between condition and free will beliefs on valid or dubious tactics beliefs.

Furthermore, free will beliefs did not correlate with SMM (r(348) = .02, p = .692). Interestingly, however, free will beliefs were negatively correlated with the NFS subscale (r(348) = –.17, p = .001) but positively with the NFM subscale (r(348) = .27, p < .001) of SMM. Although this may seem puzzling, it actually is consistent with existing theorizing: Individuals high in uncertainty avoidance should favor the idea of fixedness and determinism, because such beliefs provide more closure and understanding (Kruglanski and Sheveland 2012). At the same time, individuals motivated to understand mental states have stronger perception of controllability over their actions (Pillow and Pearson 2015). However, more studies are required to support this conjecture.

How do free will beliefs relate to manipulation beliefs? A mediation analysis (PROCESS Model 4; Hayes 2013) showed that there was a significant indirect effect of NFM on dubious beliefs mediated by free will beliefs (b = –.14, 95% CI: –0.256 to –0.040), despite non-significant total effect (p = .325). Free will beliefs also partially mediated the effect of NFS on dubious beliefs (b = 0.05, 95% CI: 0.003 to 0.120), although the total effect was not significant (p = .277). Free will beliefs did not mediate the effect of NFM (CI: –.070 to .039) or NFS (CI: –.038 to .016) on valid tactics.

FIGURE D1

FREE WILL BELIEFS MEDIATION MODEL FROM STUDY 4 FOR NFM (A) AND NFS (B)



*p < .05; **p < .01; ***p < .001

Study 5: Mediation Analysis of MITE Scores

Interestingly, the Mind in the Eyes (MITE) task was better solved by women (b = 0.27, SE = 0.10, p = .007) and older people (b = 0.02, SE = 0.007, p = .001), however, there were no such effects in the RPM task scores (b_{gender} = 0.003, SE = 0.12, p = .977; b_{age} = –0.002, SE = 0.008, p = .818).

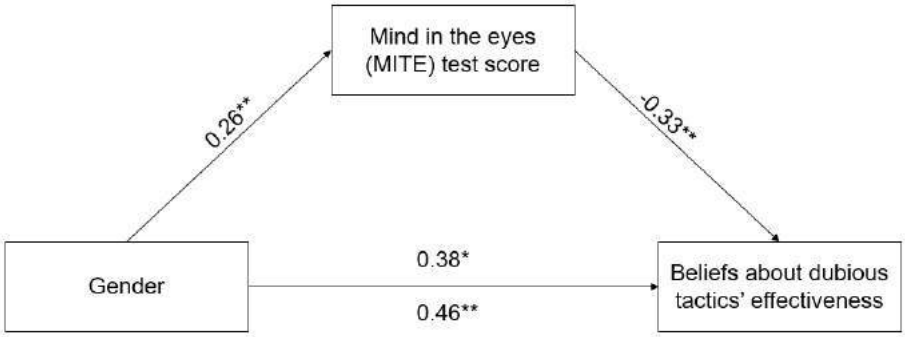
Moreover, the MITE task scores partially mediated the effect of gender on beliefs for dubious (b = –0.09, 95% CI: –0.188 to –0.011) but not valid (b = 0.002, 95% CI: –0.040 to 0.048) tactics, where women had overall higher beliefs for dubious tactics than men (b = 0.38, SE = 0.17, p = .025), but their ability to understand other people attenuated these beliefs. Together with the result that women have higher beliefs in manipulation because of their increased sense-making motivation (see internal meta-analysis), this finding might be quite interesting yet puzzling. Future studies might address this finding in more detail.

We did not find significant results in corresponding mediation testing of age and RPM scores (ps > .10).

FIGURE D2

MITE SCORE MEDIATION MODEL FROM STUDY 5

95% CI on indirect path: –0.251 to –0.038



*p < .05; **p < .01; ***p < .001

APPENDIX E

Internal Meta-Analysis of Studies 1–5

Mixed Effects Logistic Regression Results

In addition to testing our main hypotheses, we also dummy-coded manipulation beliefs to conduct a mixed effects logistic regression, where responses above the scale midpoint (0) were coded as 1. The idea was to investigate whether SMM can predict true-positive and false-negative valid tactics' effectiveness, and true-negative and false-positive dubious tactics' effectiveness.

For valid tactics, beliefs equal to 1 denote true-positive persuasion detection, while beliefs equal to 0 show false-negative persuasion detection. For dubious tactics, the reverse is true: Beliefs equal to 1 show false-positive persuasion detection, while beliefs equal to 0 mean true-negative persuasion detection. The results show that for valid persuasion detection, consumers 1 SD above the mean on SMM will correctly identify persuasion 92.2% of the time, while consumers 1 SD below the mean will do so only 90.3% of the time ($p = .014$). For dubious persuasion detection, consumers 1 SD above the mean on SMM will falsely identify dubious tactics as valid 78.7% of the time, whereas consumers 1 SD below the mean will do so only 71.3% of the time ($p < .001$). This is consistent with our predictions, stating that SMM might not only result in accurate true-positive persuasion detection (hypothesis 1a), but also in hyper-detection of dubious persuasion (hypothesis 1b).

Of course, the other way to think about this finding is that even low-SMM consumers thought that dubious tactics such as hypnosis and subliminal messaging were effective more than 70% of the time. Thus, even though SMM is linked to manipulation beliefs—implicating our proposed mechanism—being high in SMM is not a necessary condition for believing in dubious marketing manipulation.

NFM and NFS Correlation

The meta-analysis allowed us to conduct a more detailed analysis of our SMM scale. Specifically, we were interested in the relationship between our *subscales*— need for structure (NFS) and need for mentalizing (NFM). The meta-analysis revealed a modest relationship between these subscales, which were not significantly correlated in any of the individual studies ($p > .10$). For testing this, we used Metafor package in R and a random effects model (Viechtbauer 2010). We input correlation coefficients (r) from all the studies, including study 1a ($N = 1{,}463$). Overall, NFS and NFM are significantly correlated ($r = .05$, $p = .049$), although this relationship is quite small. This demonstrates that NFS and NFM might be conceptually related, but are far from identical. This finding is consistent with results from neuroscience suggesting that theory-of-mind is a domain-specific ability (Frith and Frith 2003; Saxe and Kanwisher 2003; Spunt, Satpute, and Lieberman 2011) separate from other kinds of processing such as general reasoning (Cabeza and Nyberg 2000; Van Overwalle 2010).

NFM was significantly associated with manipulation beliefs for both valid (b = 0.32, SE = 0.05, p < .001) and dubious (b = 0.32, SE = 0.09, p < .001) tactics. NFS significantly predicted beliefs for valid tactics (b = 0.19, SE = 0.04, p < .001) and marginally predicted beliefs for dubious tactics (b = 0.13, SE = 0.07, p = .048). These effect sizes are highly statistically robust given the large amount of data, with NFM having larger effects than NFS. Although NFM and NFS are conceptually related, as different kinds of motivations for seeking explanations, NFS measures structure-seeking motivations about events generally, whereas NFM measures more domain-specific motivations to understand mental states such as persuasive intentions (Falk et al. 2010). Therefore, it makes sense that NFM is a stronger predictor than NFS in a persuasion context (see tables C3 and C4 in appendix C).