Empirical Research Paper

Influences of Position Justification on Perceived Bias: Immediate Effects and Carryover Across Persuasive Messages

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Abstract
The current research examined how people infer whether novel sources are biased based on their ability to justify their position. Across nine studies, when sources provided weak versus strong arguments, message recipients perceived the source as more biased. This effect held controlling for other possible inferences, such as lack of expertise or untrustworthiness. This research also examined whether perceived source bias on one message can carry over to ambiguously related future persuasive messages. Studies 6 to 8 demonstrated that perceivers use both the perceived bias from an initial message and the argument quality of the second message to determine a source's bias on the new topic. Finally, perceived bias carried over from an initial message can influence persuasion on a second topic (Study 9). Ultimately, the present work provides insight into factors that affect perceived bias and the dynamic consequences of those perceptions.

Introduction

Research directly manipulating source perceptions has repeatedly demonstrated causal effects of source characteristics on persuasion (see Petty & Wegener, 1998). However, people often encounter novel sources, such as a new radio station announcer or an unfamiliar politician. In some situations, listeners' primary goal may be to form an impression of the source (e.g., Clark et al., 2013). In such cases, people do not receive direct information about the source's characteristics and must rely on the message to infer the source's qualities. In the current paper, we examine whether recipients might use message argument quality to infer whether a source is biased, among other inferences.

Perceived Source Bias

Persuasion research is replete with examinations of source characteristics. Yet, until recently, researchers have largely ignored source bias or treated it as conceptually equivalent to source untrustworthiness. Recent research has separated perceived bias from perceived untrustworthiness and other related perceptions (Wallace et al., 2020a, 2020b). Source bias refers to skewedness in the source's perception, which may stem from motivation to hold a particular position or slanted knowledge exposure. Importantly, this skewedness refers to a difference between the source's view and the

correct view in the perceiver's eyes. Previous work has identified that source bias is conceptually distinct from source untrustworthiness, which refers to the source's willingness to be dishonest, and from source expertise, which refers to the source's knowledge. As an example of how perceived bias can differ from these other perceptions, consider grandparents, who most people view as honest and expert about their grandchildren, but also as favorably biased toward their grandchildren.

Source bias can affect persuasion in manners that parallel and differ from perceived untrustworthiness and inexpertise (Wallace et al., 2020a, 2020b). For example, source credibility—the overall believability of the source—has been routinely conceptualized as the combination of expertise and trustworthiness (Cooper et al., 2016; Hovland et al., 1953). However, recent work illuminated that source bias also independently undermines source credibility, which ultimately impairs persuasion attempts (Wallace et al., 2020b). Furthermore, source bias can have different effects than untrustworthiness. People expect biased, but

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not untrustworthy, sources to be consistent in their positions (Wallace et al., 2020a). Therefore, people are particularly surprised when biased, but not untrustworthy, sources switch positions, inferring that biased sources would only switch for good reasons. Such inferences are associated with greater persuasion toward the new position, resulting in a positive indirect effect of source bias on persuasion, but still a negative indirect effect of source untrustworthiness. Thus, source bias can be separated from traditional source perceptions (untrustworthiness or inexpertise), and perceived bias can either undermine or bolster persuasion, under different conditions. Consequently, it is important to understand how recipients infer that a source is biased.

Antecedents of Perceived Bias

Most literature on inferring others' biases has focused on (dis)agreement. The theory of naive realism (Ross & Ward, 1996) proposed that people view themselves as objective perceivers, and assume that other reasonable people with access to the same information will share their perspective. Consequently, when confronted with disagreeing others, people tend to view their positions as influenced by self-interest (Reeder et al., 2005), personal affections (Frantz, 2006), political partisanship (Cohen, 2003), or unwavering ideology (Robinson et al., 1995).

Social judgment theory (Hovland & Sherif, 1961) also predicted that people would view disagreeing others as biased. Social judgment theory posited that a person's attitude serves as an anchor. Around the anchor, people have a latitude of acceptance containing positions they find agreeable. They also have a latitude of rejection, containing positions they find disagreeable. When people encounter messages in their latitude of acceptance, they assimilate those positions toward their own. When people encounter messages in their latitude of rejection, they contrast those positions away from their own. Hovland & Sherif (1961) suggested that this same process might lead people to view messages in their latitudes of rejection as more biased, but view messages in their latitudes of acceptance as less biased. A similar process could apply to perceptions of the message source.

Beyond agreement, expectations for the position a source will take also influence perceived bias. Eagly et al. (1978) found that receivers expect sources to take positions consistent with the source's experiences (e.g., that a former environmental lawyer will take a pro-environment position). When sources fulfill these expectations, receivers infer that the source is biased (referred to by Eagly et al., 1978, as knowledge bias). However, when sources take a position opposing their previous experiences, receivers view the source as unbiased.

Position Justification Effects on Perceived Bias

Thus, existing work has largely focused on inferences of bias from the source's position. However, the source's ability to effectively justify their position could also influence perceived bias. When a source can effectively justify their position, message recipients can assume that the source has taken their position for the stated reasons. However, when a source cannot effectively justify their position, recipients may question why someone would take a position they cannot defend. It may prompt recipients to consider other motivations for taking the position, including social pressure or obligation, potential personal gain, or group-based affiliations—all factors that could bias someone's perspective. When people are motivated to take a stance, they may view their evidence for the position as reasonable, even if others would not. Recipients may realize this and attribute bias to a source who flounders when trying to provide reasonable evidence. The current research examines whether people view sources who cannot effectively justify their position as more biased than those who can, holding constant the source's position. In the current paper, we instantiate position justification through the quality of arguments that a source provides.

Argument Quality

Argument quality is essential in persuasion research (Wegener, Downing, et al., 1995). When recipients elaborate, they are more persuaded by strong rather than weak arguments (Petty et al., 1981), and elaborated attitudes are more predictive of behavior, resistant to persuasion, and persistent over time (Petty et al., 1995). Thus, the argument quality of an initial message can impact the future reactions that a person has to that topic. Furthermore, previous work has found that argument quality can influence perceived source expertise (Erb et al., 2007; Petty et al., 1981; Reimer et al., 2004). Given the logic described above, we thought that recipients might also use argument quality to infer source bias, with strong versus weak arguments representing effective versus ineffective position justification.

Importantly, we predict that argument quality effects on perceived bias should occur controlling for perceptions of source untrustworthiness, inexpertise, or dislikeability, consistent with recent work demonstrating that bias is separable from these other perceptions (Wallace et al., 2020b). Of course, argument quality could additionally influence these other perceptions, especially expertise (Erb et al., 2007; Petty et al., 1981). To provide an in-depth analysis, we explored effects of message argument quality on these additional source perceptions as well. However, because people can view others as biased even when viewing the source positively or negatively on other dimensions (Wallace et al., 2020b), we predicted that there would be an independent influence of argument quality on perceived bias, the dependent variable of particular interest.

Carryover of Source Bias Across Message Topics

People also commonly receive messages from the same source on different topics. Perceived bias formed on one

Table 1. Overview of Studies and Their Differences.

Study	First message topic	Liking and intelligence measures	Second message purpose
Study 1	Nuclear power	Yes	No message
Study 2	Politician	No	No message
Study 3	Politician	Yes	No message
Study 4	Politician	No	Presented in supplement: Examined carryover of perceived bias to second topic moderated by relatedness of second topic (no message)
Study 5	Politician	No	Presented in supplement: Examined carryover of perceived bias to second topic moderated by relatedness of second topic (no message)
Study 6	Politician	No	Carryover of perceived bias to a second message (university service program) that has clearly strong or weak arguments
Study 7	Politician	Yes	Carryover of perceived bias to a second message (university service program) that has clearly strong or weak arguments
Study 8	Politician	Yes	Carryover of perceived bias to a second message (plastic bag tax) that has clearly strong or weak arguments
Study 9	Politician	Yes	Influences of perceived bias formed during an initial message on persuasion by a second message on a new topic (university service program)

topic could influence perceived bias on others. By affecting source perceptions, the argument quality of one message could influence attitudes across topics on which that source takes a stance, highlighting that initial message argument quality may influence attitudes on a wide range of topics beyond the original message.

Research and Analysis Overview

We first present a factor analysis of source characteristics. This provides an additional test of the separation of perceived bias from other source characteristics. Next, we present an initial study (Study 1) examining argument quality effects on perceived bias (see Table 1 for overview of studies). Then we present eight additional studies using a different paradigm than Study 1, but nearly identical methods to one another to replicate argument quality effects on perceived bias. Because these eight studies were nearly identical and comprise all data using this paradigm, we group results of those studies (results of each study are very similar and available in the Online Supplement). Some, but not all, studies included measures of perceived liking and intelligence, so we group these results presentations by the studies that include perceived liking and intelligence versus not.

In the second part of the paper, we revisit studies from the first part that included a second message to examine consequences of perceived bias formed after the first message. We first examined whether perceived bias would carry over from one topic to another. Therefore, Studies 6, 7, and 8 provided a second message on a topic ambiguously related to the initial topic. Beyond replicating argument quality effects on perceived bias in the second message, these studies tested whether perceived bias formed on an initial message might influence perceived bias on a second topic.[1] In addition, Study 9 tested whether perceived bias based on an initial

message could influence persuasion on a future topic. To present our studies clearly and efficiently, we present our methods and results by the question they were designed to address (front-end questions vs. back-end questions) rather than presenting entire studies at once.

Factor Analysis

To contribute to a growing literature identifying perceived bias as an independent source perception, we begin the empirical portion of this paper with a factor analysis. All nine of the current studies included nearly identical measures of perceived bias, trustworthiness, and expertise, providing us with a large sample completing the same measures. Five studies also included measures of perceived intelligence and likeability. We first conducted a factor analysis with only studies that did not have measures of likeability and intelligence, then only studies with these measures.

We conducted these factor analyses consistent with recommendations from Fabrigar & Wegener (2012). Because of space constraints, we report the analysis approach to this factor analysis in the Online Supplement. Importantly, the results of these factor analyses generally supported our conceptualizations of these characteristics, with the items loading on the intended factor in each analysis. Of most importance, perceived bias loaded on a separate factor than the others. The perceived objectivity item had smaller loadings on the bias factor and cross-loaded on the expertise factor. This could reflect that it is a reverse-coded item and would be consistent with previous work showing that reverse-scored items sometimes load separately (Edwards et al., 2010). Because of this, any composites of perceived bias described in the studies only include the first two bias items. Analyses including the objectivity item in the composite are available in the Online Supplement and largely support the same conclusions, with one exception footnoted

Table 2. Panel A: Factor Loadings (Bold When Absolute Value >.5) for a Three-Factor Solution for the Studies That Did Not Contain Measures of Perceived Source Intelligence and Likeability.

Item	Bias	Trust	Expertise
To what extent do you feel that [source's] opinion of [topic] is a product of personal bias?	**0.87**	0.00	0.00
How much do you think that [source] has a biased perspective about [the topic]?	**0.90**	0.01	0.01
How objective do you think [source] is in evaluating [topic]? [reverse-scored]	0.32	−0.16	−0.40
How qualified did you think that [source] was to speak about [topic]?	−0.09	0.14	**0.64**
To what extent does it seem like [source] is an expert on [topic]?	0.00	−0.11	**0.95**
To what extent does it seem like [source] is knowledgeable about [topic]?	0.06	0.14	**0.74**
To what extent does it seem like [source] is trustworthy?	−0.14	**0.61**	0.24
To what extent does it seem like [source] is honest?	−0.07	**0.94**	−0.08
How much do you think that [source] truly believes what [she/he/they] is saying?	0.08	**0.62**	0.05

Panel B: Correlations Between Factors in Studies Without Measures of Perceived Source Intelligence and Likeability.

	1	2	3
1. Bias	1.00		
2. Trust	−.40	1.00	
3. Expertise	−.48	.71	1.00

Table 3. Panel A: Factor Loadings (Bold When Absolute Value >.5) for a Five-Factor Solution for the Studies That Did Contain Measures of Perceived Source Intelligence and Likeability.

Item	Bias	Trust	Expertise	Intelligence	Liking
To what extent do you feel that [source's] opinion of [topic] is a product of personal bias?	**0.83**	0.00	0.03	0.01	−0.06
How much do you think that [source] has a biased perspective about [topic]?	**0.96**	−0.01	−0.02	−0.02	0.07
How objective do you think [source] is in evaluating [topic]? [reverse-coded]	0.30	−0.06	−0.25	−0.11	−0.13
How qualified did you think that [source] was to speak about [topic]?	−0.09	−0.01	**0.64**	0.09	0.12
To what extent does it seem like [source] is an expert on [topic]?	0.02	−0.03	**0.98**	−0.05	0.00
To what extent does it seem like [source] is knowledgeable about [topic]?	0.02	0.13	**0.74**	0.09	−0.04
To what extent does it seem like [source] is trustworthy?	−0.15	0.49	0.15	0.03	0.22
To what extent does it seem like [source] is honest?	−0.09	**0.94**	−0.05	−0.02	0.01
How much do you think that [source] truly believes what she is saying?	0.10	**0.55**	0.07	0.05	0.02
How much do you like [source]?	−0.02	0.00	0.02	−0.04	**0.96**
How likable do you think [source] is?	0.05	0.09	−0.04	0.09	**0.77**
How much would you enjoy spending time with [source]?	−0.02	−0.02	0.04	0.02	**0.79**
How intelligent do you think [source] is?	−0.03	−0.01	0.00	**0.94**	0.03
How smart do you think [source] is?	−0.02	0.00	−0.01	**1.01**	−0.04
How high is [source's] IQ?	0.04	0.01	0.02	**0.81**	0.03

Panel B: Correlations Between Factors in Studies With Measures of Perceived Source Intelligence and Likeability.

	1	2	3	4	5
1. Bias	1.00				
2. Trust	−.24	1.00			
3. Expertise	−.33	.64	1.00		
4. Intelligence	−.31	.59	.66	1.00	
5. Liking	−.38	.75	.64	.73	1.00

in the text. Correlations between each factor are reported in the lower panels of Tables 2 and 3. Although there were some strong relations among factors, they tended to be between perceived trustworthiness and factors other than bias.

Initial Test of Argument Quality Effects on Perceived Bias: Study 1

Study 1 examined whether message recipients would infer that the source was biased when they provided weak versus

Table 4. Means and Standard Deviations, as Well as Zero-Order Correlations Between Source Perceptions and Attitudes Toward Nuclear Power in Study 1.

Variable	M	SD	1	2	3	4	5	6
1. Bias	6.12	1.90						
2. Trustworthiness	5.41	1.85	−.32**					
3. Expertise	4.39	2.15	−.35**	.70**				
4. Intelligence	5.70	1.78	−.24**	.66**	.71**			
5. Liking	4.64	1.84	−.33**	.80**	.67**	.69**		
6. Pre-message attitudes	3.98	2.54	−.28**	.33**	.19**	.16**	.36**	
7. Post-message attitudes	4.51	2.57	−.41**	.52**	.42**	.36**	.56**	.78**

$*p < .05. **p < .01.$

strong arguments. Persuasion research has almost exclusively manipulated each source characteristic individually and has not examined whether those manipulations affect other characteristics, despite these being potential confounds. Therefore, we also measured perceived source trustworthiness, expertise, likeability, and intelligence to examine whether the argument quality manipulation would affect perceived bias beyond influences on these other perceptions. We present results for each perception to provide an in-depth analysis of the effects of argument quality on source characteristics.

Furthermore, although research has found that disagreement affects perceived bias, it has not examined whether this holds when controlling for alternative perceptions (Kennedy & Pronin, 2008; Robinson et al., 1995; Cheek et al., 2020). It is possible that previously observed agreement effects on perceived bias simply reflect a halo from agreement effects on other perceptions. Thus, as a secondary goal, the current data provide the opportunity to examine whether there are independent agreement effects on source bias, as well as on other perceptions.

Method

Design and procedure. After consenting to participate, 370 Mechanical Turk workers reported their pre-message attitudes toward building more nuclear power plants in their state, among several filler items. They were instructed to imagine that it was campaign season and a citizen, Greg, was advocating for a ballot measure to build more nuclear power plants in their state. Participants were randomly assigned to read either strong or weak arguments from Greg in favor of more nuclear power plants.[2]

Participants then reported their perceptions of Greg as biased, trustworthy, expert, likable, and intelligent. Participants also reported their post-message attitudes toward building more nuclear power plants in their state. Complete materials for all studies are included in the Stimulus File.

Sample. For all studies in this package, sample size was determined through rules of thumb, availability of resources, and sensitivity to the proposed design. At minimum, we

aimed to have about 40 people per cell. However, this number was often larger as availability of data collection resources was greater or designs were more complex. Three participants were excluded for failing a manipulation check, leaving 367 for analyses.

Independent and predictor variables
　Argument quality. In the strong message, Greg argued that traditional sources of energy are bad for the environment and that nuclear power is relatively safe. In the weak message, he argued that new nuclear power plants would be aesthetically pleasing and provide growth to the lab coat industry.

　Pre-message attitudes toward nuclear power. Participants were asked, "How much do you support the building of more nuclear power plants in your state? (1 = *not at all*, 9 = *very much*)."

Dependent variables
　Source perceptions. The measures of perceived bias (α = .88), trustworthiness (α = .86), expertise (α = .93), likeability (α = .92), and intelligence (α = .95) are reported above in the factor analysis. Because each of these scales had reasonable reliability, we combined the items for each scale into a composite. Each item was measured on a 9-point scale (1 = *not at all*, 9 = *very much*).

　Post-message attitudes toward nuclear power. We measured post-message attitudes using three items each on a 9-point scale. An example item was, "To what extent is building more nuclear power plants in your state a good idea?" (1 = *not at all*, 9 = *very much*). These items were averaged to create a composite, α = .98.

Results

Means and standard deviations for variables of interest, as well as their correlations are reported in Table 4.

Inferring source perceptions from argument quality. We began by examining effects of only the argument quality manipulation
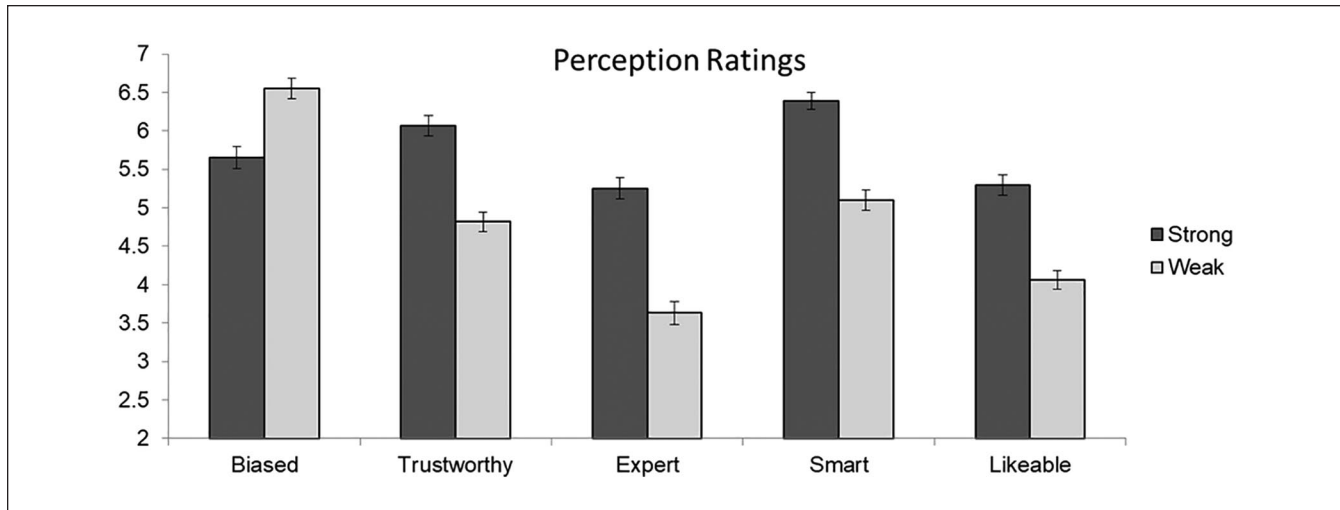
Figure 1. Effects of argument quality on each source perception without controlling for the others.

Table 5. Output From Regressions of Each Source Perception on the Argument Quality Manipulation Only (First Row) and on the Argument Quality Manipulation and the Other Source Perceptions (Last Six Rows) in Study 1.

	Bias			Trust			Expert			Smart			Like		
Predictor	b	t	p	b	t	p	b	t	p	b	t	p	b	t	p
Argument Quality only	−.45	−4.64	<.001	.62	6.80	<.001	.80	7.72	<.001	.64	7.40	<.001	.61	6.71	<.001
Argument Quality with covariates	−.22	−2.19	.03	.03	.55	.58	.17	2.27	.02	.13	2.02	.04	.02	.35	.73
Bias	—	—	—	−.03	−.81	.42	−.12	−2.93	.004	.06	1.85	.07	−.07	−2.13	.03
Trustworthiness	−.07	−.81	.42	—	—	—	.37	5.61	<.001	.10	1.69	.09	.55	12.75	<.001
Expertise	−.20	−2.93	.004	.22	5.61	<.001	—	—	—	.33	8.02	<.001	.06	1.49	.14
Smart	.15	1.85	.07	.08	1.70	.09	.46	8.02	<.001	—	—	—	.27	5.97	<.001
Like	−.19	−2.13	.03	.56	12.75	<.001	.10	1.49	.14	.33	5.97	<.001	—	—	—

on the source perceptions (Figure 1, Table 5). These analyses demonstrated that argument quality had a significant effect on all perceptions, with weak arguments leading recipients to view the source as more biased, untrustworthy, inexpert, dislikeable, and unintelligent.

However, one or more of these effects might represent an effect of argument quality on one or several source perceptions that then spills over to the others rather than a direct effect of argument quality. Therefore, we also conducted analyses that statistically controlled for the other source perceptions when examining effects of argument quality on a given source perception. Even with the controls, argument quality continued to affect perceived bias, expertise, and intelligence. However, there was not a significant independent effect on perceived trustworthiness or likeability, suggesting that these latter effects may result from a halo.

In addition, as previous research has demonstrated that attitudes affect perceived bias (Kennedy & Pronin, 2008), we examined whether pre-message attitudes independently influenced each perception. Therefore, in separate models, we regressed each perception on pre-message attitudes, the

argument quality manipulation, and each other perceptions. Pre-message attitudes independently predicted perceived bias, $b = −.14$, $t(359) = −3.54$, $p < .001$, $r = .18$, trustworthiness, $b = .05$, $t(359) = 2.14$, $p = .03$, $r = .11$, intelligence, $b = −.06$, $t(359) = −2.15$, $p = .03$, $r = .11$, and likeability, $b = .08$, $t(359) = 3.74$, $p < .001$, $r = .19$, but not expertise, $b = −.05$, $t(359) = −1.62$, $p = .11$, $r = .09$. This replicates and extends previous work by suggesting an association between (dis)agreement and perceived bias not merely due to associations with other source perceptions, along with identifying independent agreement effects on other perceptions.

Single Message Argument Quality Effects on Perceived Bias: All of Studies 2 and 3 and Front End of Studies 4–9

To replicate Study 1, (the front ends of) Studies 2 to 9 were designed to test whether participants would infer that a source is biased when they provide weak arguments. In these studies, a citizen endorsed a politician, thus providing a conceptual replication of Study 1 and extending it to a new topic. Because

the first part of each study (only part of Studies 2 and 3) was nearly identical, we present the methods and results together. As with the factor analysis, we present two sets of combined analyses: the first includes studies without measures of perceived intelligence and liking, and the second includes studies where we did have these measures.

In addition, after reporting their perceptions of the source, participants responded to an open-ended question asking why the source supported the politician. Coding responses provided additional insight into why weak versus strong arguments lead recipients to view the source as more biased. In particular, we examined whether participants were more likely to generate reasons that had to do with motivations to take the position (personal relationship, monetary benefit, etc.) in the weak argument condition and more likely to generate reasons that had to do with the candidate's positive qualities (qualifications, education, etc.) in the strong argument condition.

Method

Design and procedure. Mechanical Turk workers (Study 2: $N = 102$; Study 4: $N = 79$; Study 5: $N = 286$; Study 6: $N = 285$; Study 7: $N = 207$; Study 8: $N = 176$; Study 9: $N = 205$) or Ohio State University students (Study 3: $N = 193$) read that the purpose of the study was to understand people's perceptions of political campaigns.[3] They were instructed to read about a fictitious political campaign and asked to imagine it was real and happening in their locality. Before receiving the passage, they read that a local citizen, Cami, would be advocating for Ben Patton, a candidate for county commissioner, and that they should focus on why she was endorsing him. Before they read the message from Cami, they read background information about the other candidate, Jim Smith.

Participants were randomly assigned to either the strong or weak argument condition. In the *weak argument* condition, they read that the opponent, Jim Smith, had good qualifications whereas the advocated candidate, Ben Patton, had poor qualifications. In the *strong argument* condition, they read that the opponent, Jim Smith, had poor qualifications whereas the advocated candidate, Ben Patton, had good qualifications. In all conditions, the information about Jim Smith was provided as background information, whereas the information about Ben Patton came from Cami in a campaign ad.

Participants then reported their perceptions of Cami as biased, trustworthy, and expert (all studies), as well as likable and intelligent (Studies 3, 7, 8, and 9). They responded to an open-ended question asking, "Why did Cami support Ben Patton?" Participants also reported their attitudes toward Ben Patton.

Sample. We initially collected more participants than reported above but excluded from analyses several participants who failed attention checks (Study 2: $N = 1$; Study 3: $N = 13$; Study 4: $N = 3$; Study 5: $N = 2$; Study 6: $N = 2$;

Study 7: $N = 4$; Study 8: $N = 4$). No participants failed these checks in Study 9.

Independent and predictor variables

Argument quality. The messages about candidates contained biographical information (adapted from Bizer & Petty, 2005). When strong arguments were provided for one candidate, weak arguments were provided for the other. Thus, we were able to use the same qualifications across conditions but simply manipulate which candidate had which qualifications. For example, in the strong argument condition, the advocated candidate had been in public office since 1983 and had served as a state senator and local treasurer. In contrast, the opponent had only been in office since 2010 and worked as a county clerk, a job he quit after 2 years (see the Online Stimulus File for complete materials).

Dependent variables

Source perceptions. Perceived bias ($\alpha = .88$), trustworthiness ($\alpha = .79$), expertise ($\alpha = .87$), likeability ($\alpha = .90$), and intelligence ($\alpha = .94$) were measured as reported in the factor analyses. Perceived trustworthiness and expertise were measured on 7-point scales in Studies 2, 4, 5, 6, and 7 and on 9-point scales in Studies 3, 8, and 9. Before combining datasets for the following set of analyses and the factor analysis, we recoded the scales so that all were on 9-point scales.

Generated reasons for the endorsement. Participants responded to an open-ended question, "Why do you think Cami is supporting Ben Patton?" and two independent coders, blind to condition categorized responses. We developed categories for coding by examining the first twenty or so responses to get a sense of the kinds of explanations that participants were providing. Participants' explanations included (a) positive features of Ben Patton (he was qualified, highly educated, or supported the community), (b) Cami's motivations to support Ben Patton (they had a personal relationship or she was benefiting from endorsing him), or (c) Cami agreed with Patton (shared political ideology/party or she agreed with his policies). Thus, each response was coded for whether it provided a reason that fit into one or more of these categories. Coding disagreements were resolved through discussion.

Attitudes toward Ben Patton. We measured attitudes toward Ben Patton using three items each on a 9-point scale (1 = *very much*, 9 = *not at all*). An example item was "How much do you support Patton as a candidate for your local county commissioner?" These items were averaged to create a composite, $\alpha = .92$.

Results

Means and standard deviations for variables of interest, as well as their correlations are reported in Table 6.

Table 6. Means and Standard Deviations, as Well as Zero-Order Correlations Between Source Perceptions and Attitudes Toward the Candidate in the Front End of Studies 2 to 9.

Variable	M	SD	1	2	3	4	5
1. Bias	6.22	1.94					
2. Trustworthiness	5.47	1.71	−.35***				
3. Expertise	4.77	1.94	−.38***	.67***			
4. Intelligence	5.08	1.77	−.32***	.57***	.66***		
5. Liking	4.54	1.68	−.35***	.68***	.62***	.71***	
6. Attitudes	5.53	2.17	.34***	−.32***	−.32***	−.32***	−.32***

Note. Perceived likability and intelligence are only for the studies containing those measures, Studies 3, 7, 8, and 9.
$*p < .05.$ $**p < .01.$ $***p < .001.$
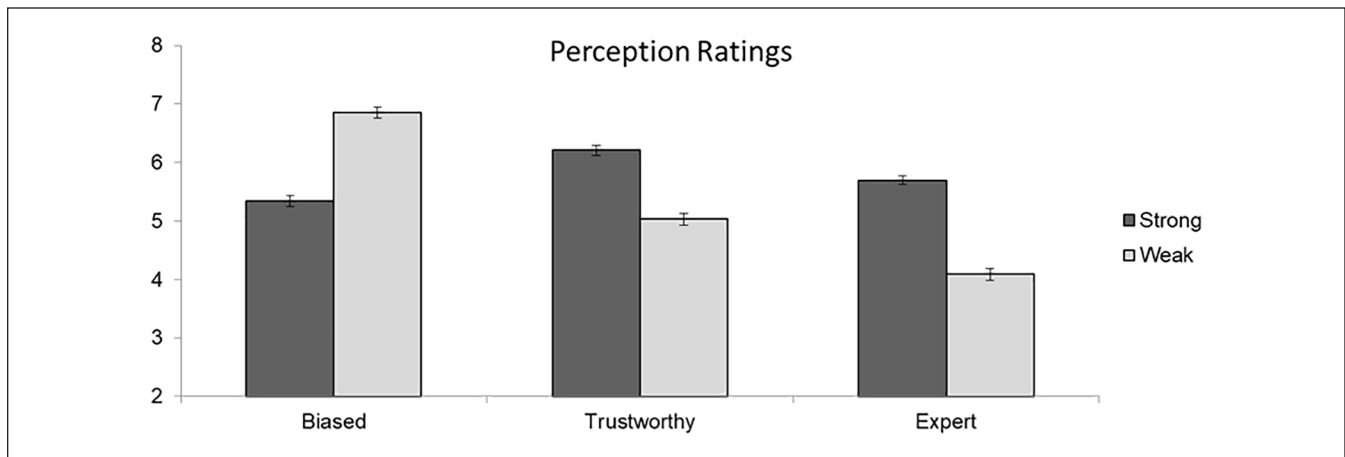
Figure 2. Effects of the argument quality manipulation on each of the perceptions in Studies 2, 4, 5, and 6 (combined).
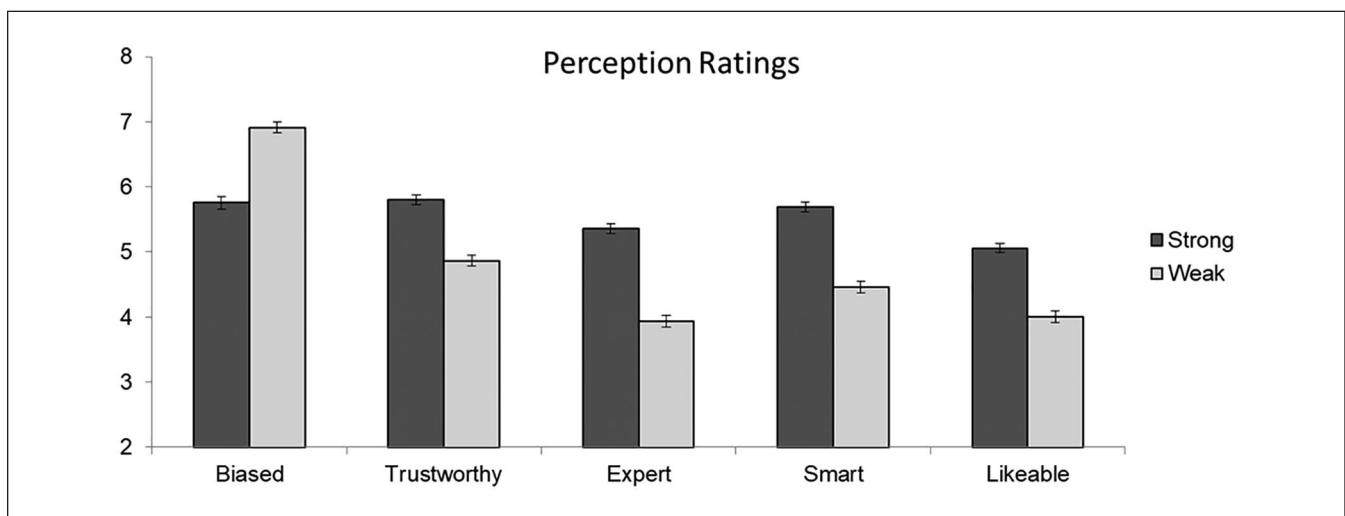
Figure 3. Effects of the argument quality manipulation on each of the perceptions in Studies 3, 7, 8, and 9 (combined).

Inferring bias from argument quality. We first present analyses from only the studies that contained measures of trustworthiness and expertise, but not intelligence and liking (Studies 2, 4, 5, and 6). We follow up those analyses by replicating our results in the study set with all covariates (Studies 3, 7, 8, and 9). In both study sets, consistent with our hypothesis, when Cami provided weak versus strong arguments, she was viewed as more biased (Figures 2 and 3,

Table 7. Effects of Argument Quality, Pre-Message Attitudes, and Other Perceptions on Each Perception in Studies 2, 4, 5, and 6 (Combined).

Predictor	Bias			Trust			Expert		
	b	t	p	b	t	p	b	t	p
Argument quality only	−.76	−11.17	<.001	.59	9.50	<.001	.81	11.92	<.001
Argument quality with covariates	−.41	−5.92	<.001	.06	1.12	.26	.29	5.13	<.001
Post-message attitudes	.19	6.33	<.001	−.05	−2.18	.03	−.09	−3.63	<.001
Bias	—	—	—	−.10	−3.44	.001	−.11	−3.70	<.001
Trustworthiness	−.17	−3.44	.001	—	—	—	.62	19.18	<.001
Expertise	−.16	−3.70	<.001	.53	19.18	<.001	—	—	—

Table 8. Effects of Argument Quality, Pre-Message Attitudes, and Other Perceptions on Each Perception in Studies 3, 7, 8, and 9 (Combined).

Predictor	Bias			Trust			Expert			Smart			Like		
	b	t	p	b	t	p	b	t	p	b	t	p	b	t	p
Argument quality only	−.58	−9.07	<.001	.47	8.46	<.001	.71	11.60	<.001	.61	10.32	<.001	.53	9.23	<.001
Argument quality with covariates	−.33	−4.95	<.001	.00	.07	.95	.23	4.75	<.001	.09	2.04	.04	.01	.14	.89
Attitudes	.14	4.47	<.001	−.05	−2.21	.03	.01	.31	.76	−.05	−2.59	.01	−.03	−1.37	.17
Bias	—	—	—	−.01	−.20	.84	−.04	−1.60	.11	−.02	−.77	.44	−.07	−3.10	.002
Trustworthiness	−.01	−.20	.84	—	—	—	.39	10.04	<.001	.01	.32	.75	.38	11.94	<.001
Expertise	−.08	−1.60	.11	.30	10.04	<.001	—	—	—	.33	10.53	<.001	.06	1.89	.06
Smart	−.04	−.77	.44	.01	.32	.75	.39	10.53	<.001	—	—	—	.40	13.17	<.001
Like	−.18	−3.10	.002	.42	11.95	<.001	.08	1.89	.06	.47	13.17	<.001	—	—	—

Tables 7 and 8). She was also viewed as less expert, trustworthy, likable, and intelligent.

In addition, as in Study 1, we wanted to control for related source perceptions to ensure that the argument quality effects on perceived bias were not due to influences of argument quality on alternative source perceptions that spilled over to perceived bias. The current studies were specifically designed so that people would not begin reading the message with previously held attitudes that would make Cami's claims agreeable or disagreeable. However, it is possible that as people were reading the message, they formed an attitude toward Ben Patton, and this attitude then influenced their perception of the source's bias. As such, in the additional analyses controlling for alternative source perceptions, we also controlled for post-message attitudes (Tables 7 and 8). Even with the source perception and attitude controls, argument quality continued to affect perceived bias, suggesting that argument quality had a direct effect rather than working only through other source perceptions or attitudes. In addition, there were independent effects on perceived expertise and intelligence, but not perceived trustworthiness or likeability. Paralleling Study 1, this suggests that argument quality had independent effects on perceived bias, expertise, and intelligence and that the effects on the other perceptions likely involve halos.[4,5]

In addition, attitudes significantly predicted perceived bias, consistent with the theory of naive realism and social judgment theory. Attitudes were also related to perceived trustworthiness and intelligence, but not perceived expertise and liking in this study.

Finally, we wanted to examine whether participants were more likely to generate reasons consistent with Patton's qualifications in the strong argument condition and with factors that might motivate Cami to support Patton in the weak argument condition. Indeed, a larger percentage of participants in the strong versus weak argument condition generated reasons related to Patton's positive qualities, $\chi^2(1, 752) = 110.71, p < .001$ (first set of studies), $\chi^2(1, 781) = 57.81, p < .001$ (second set of studies, Table 9). Furthermore, a larger percentage of participants in the weak versus strong argument condition generated reasons related to a possible motivation for taking the position, $\chi^2(1, 752) = 99.03, p < .001$ (first set of studies), $\chi^2(1, 781) = 60.01, p < .001$ (second set of studies). Furthermore, reasons related to Patton's qualifications were positively related to perceived expertise and intelligence, but negatively related to perceived bias. In addition, reasons capturing Cami's potential motivations to support Patton were positively related to perceived bias but negatively related to perceived expertise and intelligence. Thus, the explanations that participants generated for Cami's position suggest that strong arguments provide a plausible explanation for someone's position. However, weak arguments lead people to infer that the source must be taking the position due to some other motivation.

Table 9. Percentage of Participants Generating a Particular Explanation for Cami's Position by Argument Quality Condition and Study Set, as Well as the Correlation Between the Reasons Generated and Perceived Bias, Expertise, and Intelligence.

Explanation	Studies 2, 4, 5, and 6 (combined)				Studies 3, 7, 8, and 9 (combined)				
	Strong	Weak	Bias	Expert	Strong	Weak	Bias	Expert	Smart
Patton's positive qualities	47	12	−.31***	.38***	38	14	−.23***	.23***	.25***
Cami is motivated	18	52	.42***	−.44***	22	48	.31***	−.26***	−.23***
Cami agrees with Patton	26	20	−.04***	.07***	32	20	−.07	.10**	.09*

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

We had less clear predictions about whether weak or strong arguments might lead participants to conclude that Cami's support was due to her agreement with Patton. In the end, participants in the strong argument condition were somewhat more likely to say that Cami agreed with Patton, $\chi^2(1, 752) = 3.10$, $p = .08$ (first set of studies), $\chi^2(1, 781) = 14.39$, $p < .001$ (second set of studies). These responses were less related to the perceptions than the other types of open-ended responses.

Thus, across these 1,300+ participants, people used argument quality to form impressions of a source's bias, expertise, and intelligence. This effect occurred beyond any effects of agreement with the source's position or other related source perceptions that might also have been affected by argument quality.

Perceived Bias Carryover: Back End of Studies 6, 7, and 8

Studies 6 to 8 contained a second message that allowed us to examine whether perceived bias would carry over from one topic to another. Previous research has demonstrated that the argument quality of an initial message can influence the reactions to that topic in the future (Petty et al., 1995). When people are elaborating on message content, the impact and durability of the resulting attitudes reflect continuing influence of the original arguments. By demonstrating that argument quality can also influence source perceptions, the current research suggests a new possibility: the argument quality of an initial message may have downstream consequences on *different* topics.

When people initially perceive a source as biased and then encounter that source advocating on another topic, they likely use information in the new message to test for bias on the second topic. However, they may also carry their initial impressions of bias over to the new setting. To test such predictions, the back end of Studies 6, 7, and 8 included a second message in which we manipulated argument quality. In addition to testing the carryover of bias, manipulating argument quality in a second message allowed us to conceptually replicate the argument quality effects found in the front end of the studies. This replication involved in a more traditional message, like that in Study 1, where a single side of a message is presented, rather than information about two choice alternatives. Because the back ends of Studies 6 to 8 tested the same hypothesis, we present combined results (see the Online Supplement for results of each study).

Method

Design and procedure. After completing the first part of the study as described earlier, participants answered some filler questions. This included pre-message attitudes toward a state university service program through which students could work for the university as staff members for reduced tuition (in Studies 6 and 7) or toward a plastic bag tax, charging $.10 for every plastic bag used at the grocery store (Study 8). Next, participants read that Cami, a local citizen who endorsed the political candidate in the first message, was also endorsing a ballot initiative supporting the university service program (Studies 6 and 7) or the plastic bag tax (Study 8). In Study 7 (but not Studies 6 or 8), participants also read that Cami's political party had endorsed the initiative. These topics were chosen because pretesting indicated that participants viewed them as moderately related to the first message, providing a setting in which perceived bias based on the first message could, but would not necessarily, carry over to the second topic. Cami provided strong or weak arguments supporting the university service program (Studies 6 and 7) or plastic bag tax (Study 8). Finally, participants reported their perceptions of Cami's bias and post-message attitudes toward the university service program or plastic bag tax.

Independent variables

Argument quality. Second message argument quality was manipulated by providing strong or weak reasons supporting the university service program (Wegener, Petty, & Smith, 1995) or plastic bag tax. The strong arguments for the university service program included recruiting and maintaining prestigious faculty and keeping university education affordable. The weak arguments included beautifying the campus and investing less money into library books and computers because students would have less time to study. The strong arguments for the plastic bag tax included that creating plastic bags uses almost 10% of the world's oil supply. The weak arguments included that plastic bags look like ghosts so they might scare children who see them blowing around.

Pre-message attitudes. Among several filler questions, participants answered, "How much would you support a university tuition plan that allowed students to receive reduced tuition by working part time for the university (This plan would not affect students choosing not to participate.)?" in Studies 6 and 7 and "How much would you support a plastic bag tax through which people would be charged 10 cents for each plastic bag they used at the grocery store?" in Study 8. These items were measured on a 9-point scale (1 = *not at all*, 9 = *very much so*).

Dependent variables

Post-message attitudes. Post-message attitudes toward the university service program were measured with three 7-point items, such as, "How much is the university service program a good idea?" (1 = *not at all*, 7 = *very much*), α = .97. Post-message attitudes toward the plastic bag tax were measured with three 9-point items, such as, "How much is the plastic bag tax is a good idea?" (1 = *not at all*, 9 = *very much*), α = .98. Before combining studies, we recoded the university service items to be on a 9-point scale. The second message topic was not introduced as particularly high or low in personal relevance, and the arguments were designed to be clearly strong and weak. Therefore, the study was not designed to examine specific cue (if relevance had been low, Petty et al., 1981) or directional processing roles (if relevance had been high and arguments were more ambiguous, Chaiken & Maheswaran, 1994; Wallace et al., 2020b) for perceived source bias in persuasion. The more general uses for including pre- and post-message attitude measures in the current studies were to examine agreement effects on perceived bias (cf. Ross & Ward, 1996) and to ensure that the strong arguments were perceived as more compelling than the weak arguments.

Perceived bias. Perceived bias was measured the same as in the first part of the study except that the items referred to Cami's stance on the university service program or the plastic bag tax, α = .90.

Results. First, the back end of these studies allowed us to conceptually replicate argument quality effects on source bias. We also wanted to test whether perceived bias could carry over from one topic to another. Finally, this study allowed us to re-examine agreement effects on perceived bias based on pre-message attitudes (e.g., Kennedy & Pronin, 2008; Ross & Ward, 1996; current Study 1). Therefore, we regressed Time 2 perceived bias on (centered) Time 1 perceived bias, second message argument quality, and pre-message attitudes. We had considered that participants might be most sensitive to the second message argument quality when they initially viewed the source as biased, because they might use the second message argument quality to "test" whether the source is biased on the new topic. Therefore, we also included the interaction between initial perceived bias and

second message argument quality. Replicating the first part of the studies, participants viewed the source as more biased when they provided weak versus strong arguments, $b = -.77$, $t(597) = -8.61$, $p < .001$, 95% confidence interval (CI) $[-.94, -.59]$, $r = -.33$. Initially viewing the source as biased also led participants to view the source as more biased on the new topic, indicating carryover, $b = .15$, $t(597) = 3.56$, $p < .001$, 95% CI $[.07, .24]$, $r = .14$. Finally, pre-message attitudes also predicted perceived bias, $b = -.12$, $t(597) = -3.13$, $p = .002$, 95% CI $[-.19, -.04]$, $r = -.13$, replicating agreement effects. There was not a significant interaction between Time 1 perceived bias and second message argument quality, $b = -.05$, $t(597) = -1.12$, $p = .26$, 95% CI $[-.13, .04]$, $r = -.05$.[6]

Thus, across two new topics, these results conceptually replicated that people can infer source bias from the quality of arguments the source provides. Furthermore, the results replicated agreement effects on perceived bias. Finally, participants can carry perceived bias from one message to another. Although perceived bias can carry over across topics, we do not think that it always does. In the back end of Studies 3 and 4 (reported in the Online Supplement due to space constraints), we examined whether perceived relatedness of initial and future topics would moderate carryover. These studies suggest that although people can carry perceived source bias across unrelated topics, when participants are prompted to consider the relatedness of topics, they only carry perceived bias across related topics.

Influences of Source Bias on Persuasion on a New Topic: Back End of Study 9

The back ends of Studies 6 to 8 demonstrated that perceived source bias can carry over to messages on new topics from the same source. This would be particularly important if the bias perception formed based on an initial message influences persuasion on the second message. As noted above, although the back ends of Studies 6 to 8 contained a measure of post-message attitudes, they were not designed to test high or low elaboration roles for source effects on persuasion. That is, we only provided participants with clearly strong or weak arguments—the exact conditions under which we would not expect to find source bias main effects. One could examine potential influences on amount of processing. What bias should do in this context, however, is unclear. As reported in the Online Supplement, there are nonsignificant tendencies toward pre-message source bias enhancing processing of the message when it is counter-attitudinal.

However, previous research has linked third-party reports about source bias to reduced credibility and persuasive effectiveness under conditions that allow for directional processing (Wallace et al., 2020b). This previous research used a single-shot persuasive message, rather than examining how source bias formed based on an initial

message might undermine persuasion on a second. In Study 9, we created a context that should lend itself to a directional processing mechanism for persuasion: at high levels of elaboration, recipients should process ambiguous-quality arguments more negatively when they are from a biased source than when they are from an objective source (cf. Wallace et al., 2020b).

Method

After completing the first part of the study, participants reported their pre-message attitudes toward a university service program among filler items. In this study, the university service program was framed as more normatively counter-attitudinal than in Studies 6 and 7. Participants read that Cami was endorsing the university service program through which university students would work part time for their university as janitors and cafeteria staff to maintain current tuition levels. Furthermore, to ensure that elaboration of the message was high, we simplified the arguments and presented them in a bullet-pointed list. Cami provided strong, weak, or a mix of strong and weak arguments supporting the university service program. We predicted that directional processing should most likely occur when argument quality is ambiguous, but not clearly strong or weak (Chaiken & Maheswaran, 1994). When clearly strong or weak arguments are presented, consistent with high levels of processing, there should be more persuasion by strong than weak arguments. After reading the message, participants listed up to six thoughts that they had while reading the message and rated each thought on its favorability. Finally, they reported their post-message attitudes toward the university service program and their perceptions of Cami as biased.

Independent variables

Pre-message attitudes. Pre-message attitudes toward the university service program were assessed with a single item, "How much would you support a mandatory university tuition plan through which the current tuition levels would be maintained by having the students work as secretarial and maintenance staff?" (1 = *not at all*, 9 = *very much*).

Argument quality of the second message. Participants were provided with clearly strong, clearly weak, or a mix of strong and weak arguments for the university service program. The strong arguments included, "This university service plan will keep tuition affordable for students," whereas the weak arguments included, "Because students won't want to participate in this program, enrollment will decrease, allowing easier access to football tickets."

Dependent variables. Perceived bias, $\alpha = .92$, and post-message attitudes toward the university service program, $\alpha = .98$, were measured the same as in previous studies.

Thought listing. After participants read the message about the university service program, we asked them to report up to six thoughts they had while reading the passage (Wegener, Downing, et al., 1995). They then rated the valence of each thought (1 = positive, 0 = neutral, and −1 = negative). We created a thought index by adding the thought valence and dividing by the number of thoughts. Because this index captures both thoughts relevant and irrelevant to the message, research assistants coded the thoughts for valence and relevance to the message. An index of the research assistant coded thoughts was created by adding the valence of the relevant thoughts and dividing by the number of relevant thoughts. Only 40 of the 980 thoughts (4.08%) were coded as irrelevant, suggesting that the participants were elaborating on the message. The participant-coded and research-assistant-coded thoughts were correlated at $r = .75$.

Results

Effects of source bias on thoughts. Traditional evidence of directional processing would entail an effect mediated by thoughts generated while processing the message. Thus, we will focus on initial perceived bias effects on thought favorability, and thought favorability effects on post-message attitudes. We examined a GLM in which post-message thoughts were predicted by second message argument quality (weak, mixed, or strong, a 3 level between subjects factor), initial perceived bias (continuous predictor), and their interaction, as well as pre-message attitudes (continuous covariate). For this analysis, we used participant-coded thoughts, though the pattern is identical for research-assistant-coded thoughts (see Online Supplement). As expected, pre-message attitudes significantly predicted post-message thoughts, $F(1, 198) = 9.01$, $p = .003$, $\eta_p^2 = .04$. Argument quality had a main effect, $F(2, 198) = 4.70$, $p = .01$, $\eta_p^2 = .05$, but perceived bias did not, $F(1, 198) = .16$, $p = .69$, $\eta_p^2 = .00$. Most importantly, there was a significant interaction between Time 2 argument quality and initial perceived bias, $F(2, 198) = 7.77$, $p = .001$, $\eta_p^2 = .07$. This pattern could be consistent with the hypothesis that perceived bias will primarily affect post-message thoughts in the mixed argument condition.

To probe the interaction, we contrast coded argument quality, with the first argument quality variable (AQ-SW) comparing the strong and weak conditions (strong = 1, weak = −1, mixed = 0), and the second argument quality variable (AQ-Mixed) comparing the mixed to the strong and weak conditions (strong = 1, weak = 1, mixed = −2). Both argument quality variables were entered in a mean-centered regression with initial perceived bias and each of the resulting two-way interactions predicting post-message thoughts. We also controlled for pre-message attitudes. In this model, the key interaction between perceived bias and "mixed" argument quality was significant, $b = .07$, $t(198) = 3.73$, $p < .001$, 95% CI [.03, .11], $r = .26$. Source bias negatively

affected thoughts when participants read the mixed message, $b = -.15$, $t(198) = -3.36$, $p < .001$, 95% CI [−.24, −.06], $r = -.23$, but not when they read weak arguments, $b = .02$, $t(198) = .51$, $p = .61$, 95% CI [−.06, .11], $r = -.04$. Unexpectedly, when they read strong arguments, source bias positively influenced thoughts, $b = .10$, $t(198) = 2.18$, $p = .03$, 95% CI [.01, .18], $r = .15$. We speculate that when recipients perceived the source as biased, they expected the source to provide weak arguments. When the biased source instead provided strong arguments, participants generated more favorable thoughts. The effect of source bias on thoughts significantly differed when comparing the mixed to the strong, $b = -.13$, $t(132) = -3.74$, $p = .0003$, 95% CI [−.20, −.06], $r = .31$, or the weak conditions, $b = -.08$, $t(134) = -2.63$, $p = .01$, 95% CI [−.15, −.02], $r = -.22$. Thus, the influences on thoughts were most consistent with negatively biased processing when the message was mixed rather than clearly strong or weak.

Moderated mediation analyses on post-message attitudes. We next wanted to more directly test the hypothesis that perceived source bias would lead to more negative message processing, and therefore reduce persuasion when arguments are ambiguously strong. Therefore, we used PROCESS (Hayes, 2013) to test a moderated mediation model (Model 10) in which perceived bias would lead to more negative thoughts about the message when people heard the mixed arguments, but not when they heard the strong or weak arguments. The negative thoughts generated in the mixed argument condition would then lead to more negative attitudes.

In a model with pre-message perceived bias, the argument quality variables, the corresponding two-way interactions, thoughts, and pre-message attitudes predicting post-message attitudes, thoughts influenced post-message attitudes, $b = 1.86$, $t(197) = 9.60$, $p < .001$, 95% CI [1.48, 2.25], $r = .57$, suggesting high elaboration. Pre-message attitudes also influenced post-message attitudes, $b = .63$, $t(197) = 11.88$, $p < .001$, 95% CI [.53, .74], $r = .65$, and none of the other effects in the model were significant, $ps > .16$, consistent with a mediation pattern.

The moderated indirect effect of perceived source bias through thought unfavorability was tested using 10,000 bootstrapped samples (Figure 4). In the mixed argument condition, there was a significant negative indirect effect of perceived bias through thoughts, $b = -.35$, 95% CI [−.58, −.16], but not in the weak argument condition, $b = .04$, 95% CI [−.09, .19]. Unexpectedly, in the strong argument condition there was a positive indirect effect of perceived bias on persuasion through thoughts, $b = .18$, 95% CI [.02, .36]. Consistent with this, the index of moderated mediation was significant when comparing the mixed condition to the weak and strong conditions, index $= .40$, 95% CI [.19, .65], but not when comparing the strong and weak conditions, index $= .09$, 95% CI [−.03, .21]. These findings suggest that when message quality is ambiguous, being perceived as biased on

a previous message can undermine the source's effectiveness on a new message through a biased processing mechanism.

General Discussion

This paper provided several novel insights into the antecedents and consequences of perceiving others as biased. First, the front end of each study (or the entirety of Studies 1, 2, and 3) demonstrated that participants can use the argument quality of a message to infer whether a source is biased, as well as expert and intelligent. These effects held when controlling for other source perceptions, suggesting direct independent argument quality effects on each of these perceptions. The effects on perceived bias and intelligence are novel, whereas the effect on expertise replicates and extends previous work (e.g., Erb et al., 2007; Petty et al., 1981) by controlling for alternative perceptions, suggesting argument quality has an independent effect. Although argument quality independently affected perceived bias, when controlling for other perceptions, the effect did become smaller. We speculate that the effect of argument quality on perceived bias may be partially due to participants inferring that a source who provides weak arguments lacks expertise and then searching for a reason why a source would endorse a position on which they lack expertise. One reason would be that the source is biased, either motivated to take the position or having slanted information. Therefore, although argument quality influences perceived bias directly, it may also do so through perceived expertise.

Second, this research examined downstream consequences of perceived bias formed during an initial message. Studies 6 to 8 demonstrated that when a source is initially perceived as biased, it can influence their perceived bias on future topics. These studies also replicated argument quality effects on perceived bias using a broader set of topics, including existing topics allowing for examination of pre-message attitude effects on perceived bias. The independent pre-message attitude effect on perceived bias also replicated and extended previous research (Kennedy & Pronin, 2008), which had demonstrated agreement effects on perceived bias without controlling for alternative perceptions, leaving questions about whether these were independent direct effects. Finally, we demonstrated that perceived bias formed from an initial message can influence the persuasiveness of a second message through a directional processing mechanism when elaboration is high and the second message's argument quality is mixed or ambiguous (Study 9).

Given the influence that source bias can have on persuasion (Wallace et al., 2020a, 2020b) and negotiations (Kennedy & Pronin, 2008), it is essential to understand the factors that lead to an inference of bias. Though persuasion research generally directly manipulated qualities of a source through "third-party reports," people often do not have explicit, external information about sources. The current work shows that message recipients can infer source bias
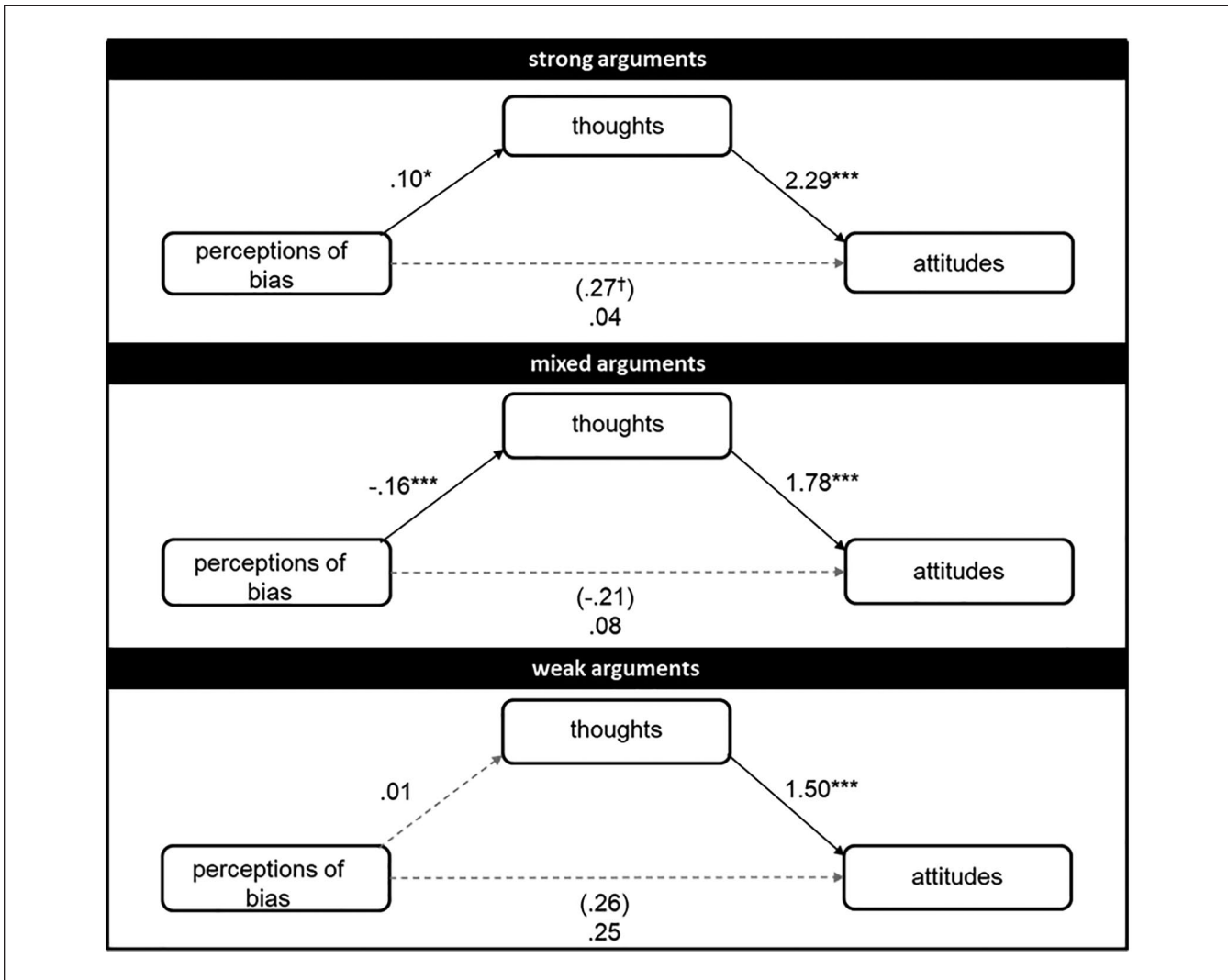
Figure 4. Effect of initial (pre-message) perceived bias on post-message attitudes mediated a through thoughts and at each level of argument quality.
Note. Total effects are in parentheses.
†*p* < .10. **p* < .05. ***p* < .01. ****p* < .001.

from the source's inability to effectively justify the position they are advocating.

The current work also provides insight into the conceptualization of bias. In the introduction, we defined perceived bias as the perception that others have a skewed perception, a definition for which the replication and extension of agreement effects on perceived bias provides additional support. To the extent that perceivers view their own positions as "the truth," the more that others deviate from their own position, the more that perceivers should regard them as having a skewed perception—as biased. Perhaps more importantly, by identifying argument quality influences on perceived bias, the current work suggests that participants are also sensitive to skewedness in the source's position compared with the position merited by the information they espouse. This may

suggest that participants are sensitive to both the source's position and the process through which they seem to have formed it (e.g., biased hypothesis testing; Trope & Liberman, 1996). Thus, whereas previous work largely considered perceived bias in terms of disagreement or the information that the perceiver has, the current work expands that view to suggest that perceivers are also sensitive to skewedness in terms of the position merited by the information the source shares.

This work not only demonstrates that people can make inferences about a source based on qualities of their message, but also highlights a novel role for argument quality in persuasion. Although previous work has found effects of argument quality on perceived expertise (Erb et al., 2007; Petty et al., 1981), the literature has largely focused on argument quality effects on attitudes and its role in documenting

elaboration. The current work highlights that argument quality can also influence source perceptions. These impressions can be important, as they could influence persuasion on diverse topics, rather than simply affecting views on the same topic through the attitudes they helped create.

In addition, the current work highlights the independence of perceived bias. Recent work has demonstrated that bias is conceptually distinct from these other perceptions and can have independent and opposing effects compared with other perceptions (Wallace et al., 2020a, 2020b). The factor analysis identified perceived bias as its own factor. Furthermore, the argument quality and agreement effects on perceived bias occurred beyond effects on trustworthiness, expertise, likeability, and intelligence, providing additional support for the conceptual independence of source bias.

In the current studies, we used persuasive message argument quality to instantiate position justification. However, there may also be non-persuasion settings in which position justification influences perceived bias. For example, in factual statements, such as when leakers unearth a scandal, position justification might include the plausibility of the facts stated. In negotiation, position justification may include the fairness of the position offered. In other contexts, people's actions might serve as position justifications. For example, if an employer proclaims to value diversity but does not hire people from underrepresented groups, observers might conclude that the employer has a bias (Wilton et al., 2020). Thus, the current argument quality effects could have implications for many settings that go substantially beyond persuasion.

Finally, the current work is the first to demonstrate that inferred bias can influence persuasion on future topics. Indeed, to our knowledge, this is the first work examining a given source's persuasiveness across messages on different topics. This research highlights that the source's behavior on an initial message can have downstream consequences for future messages.

Limitations

Statistical power. Because we were dealing with novel effects, we ensured that samples were somewhat larger than in most similar person-impression or persuasion studies, and we sought effects that replicated across studies, thereby lessening concerns about individual study power (Fabrigar & Wegener, 2016). Moreover, by making tests across the study set, the combined sample sizes also increase likely power to very high levels (McShane & Böckenholt, 2017). With the exception of the directional processing pattern in Study 9, all effects were replicated multiple times in independent samples. Even the persuasion results in Study 9 replicated previous research using more direct manipulations of source bias (Wallace et al., 2020b). When taken together, there should be little concern about statistical power for the presented analyses.

Summary and Conclusions

People often encounter novel sources of information and have to infer their qualities. In the current studies, participants inferred that a message source was biased when he or he provided weak versus strong arguments for his or her position. This inferred bias carried over and affected persuasion on future messages with different topics.

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Supplemental Material

Supplemental material is available online with this article.

Notes

1. The second part of Studies 4 and 5 examined whether the relatedness of the second topic might influence carryover of perceived bias to other topics. We decided that these results would be of secondary interest to readers so have reported these methods and results in the Online Supplement.
2. To test an exploratory hypothesis, participants were also randomly assigned to receive instructions to form an impression of the issue or the source while reading the message. This manipulation did not interact with the argument quality effect on perceived bias, $p = .19$.
3. We began with a simple 2-cell study examining between-subject argument quality effects, but as we added research questions related to follow-up messages, we increased sample size. We are including all studies using this method to manipulate argument quality, so there should be no question of selectivity in result reporting or concerning power of individual studies within the context of the overall test across studies (see also McShane & Böckenholt, 2017).
4. Some readers might be concerned that we only observed a significant effect of argument quality on perceived bias because of an inflation of the Type 1 error rate due to including covariates (Wang & Eastwick, 2020; Westfall & Yarkoni, 2016). To address this potential concern, we conducted the same analyses using

structural equation modeling to account for measurement error, and still found an independent effect of argument quality on perceived bias (in Study 1: $b = -.22$, $p = .03$; in combined Studies 2, 4, 5, and 6: $b = -.43$, $p < .001$; in combined Studies 3, 7, 8, and 9: $b = -.30$, $p < .001$).

5. Some readers might be concerned that argument quality only influenced perceived bias because it was the first perception we measured. Therefore, in Study 3, we counterbalanced the order of measures. In this study, we did not find that the order in which perceived bias was measured significantly moderated the effect of argument quality on perceived bias, $F(4, 176) = .39$, $p = .81$.

6. In analyses including the perceived objectivity item in the Time 1 and Time 2 bias indices, there is a significant interaction between Time 1 perceived bias and Time 2 argument quality on Time 2 perceived bias. See Online Supplement for details. The effects of argument quality ($p < .001$), initial perceived bias ($p < .001$), and pre-message attitudes ($p = .008$) were unchanged when controlling for perceived expertise and trustworthiness, the covariates measured in all studies.

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