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RESEARCH ARTICLE

Argument-stretching: (slightly) invalid political arguments and their effects on public opinion

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Abstract

To stretch an argument means to make a political argument that is slightly (but not glaringly) invalid. I add to existing research, which focuses on the analysis of facts and stark binary views of validity by introducing the concept of argument-stretching, which identifies subtle violations of the validity of arguments. Using this conceptual foundation, I outline an impression-formation theory to explain the impact of argument-stretching on public opinion. I suggest that people spontaneously form negative impressions of stretched arguments, and that they add these impressions to a cumulative tally of satisfaction with the argument. Finally, people translate the negative effect of argument-stretching on their account satisfaction into reduced support for the politician who stretched the argument and the policy justified by it. I confirm the hypothesized direct effects of argument-stretching on policy support and politician support in three experimental studies, and I also find evidence for the mediating effect of account satisfaction.

Keywords: political arguments; public opinion; argument validity; elite influence; political explanations

Introduction

To engage in *argument-stretching* means to make a political argument that stretches the truth while falling short of a full-blown lie. Take the argument 'transnational integration improves border security.' It would be difficult to prove that this is a lie, but most people believe that it is not fully accurate either; in their eyes, the validity of the argument has been stretched.[1] Argument-stretching is ubiquitous in politics, but rarely studied and generally overlooked in the debate about truth and democracy. Existing research as well as public discourse focus on blatant lies (instead of truth *stretching*) and on political facts (instead of *arguments*). For instance, the pervasive public and scholarly debate about fake news (Lazer *et al.*, 2018), disinformation (Vaccari *et al.*, 2023), misinformation (Nyhan and Reifler, 2015), and rumors (Berinsky, 2017) is concerned with the *intentional dissemination* of *facts* that are *clearly invalid*.

Rather than announcing itself with the fanfare of a bald-faced Trumpian lie, argument-stretching slowly creeps into political discourse by stealth. But it can undermine democratic accountability and the deliberative core of democracy at least as much as full-blown factual lies. Evidence-based policy-making and functioning democracy depend on shared standards for the

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[1]According to a representative survey (details below in the description of study 2), German voters give the argument a validity rating of 46 on a 0–100-point scale, which is just below 50.4, the average for the eight most common pro-integration arguments. This makes the argument *stretched* but far from blatantly invalid. Surveys identify argument-stretching based on *subjective* perceptions, while expert ratings, for instance, would try to determine the *objective* truth of an argument.

validity of claims about cause and effect that constitute arguments, and these standards are much more vulnerable and contestable than the norm that it is wrong to spread lies. The importance of valid arguments can be demonstrated by drawing on both deliberative and representative conceptions of democracy. From the *deliberative* point of view, giving truthful accounts of political views is key for accessible, fair, and equal democratic discourse (Fishkin, 2009). The *representative* perspective would emphasize that politicians need to offer truthful explanations for their behavior to guarantee effective democratic accountability (Mansbridge, 2009).[2] Argument-stretching undermines democratic norms of deliberation and accountability, largely unnoticed by political observers and political science research, one stretched argument at a time.

By introducing the concept of argument-stretching and explaining its effects on public opinion, this article fills a major gap in the academic literature and public discourse about truth in politics. It contributes to several areas of scholarship for which the validity of arguments is a relevant concern, including research on *democratic deliberation* (Steenbergen *et al.*, 2003; Barabas, 2004; Gerber *et al.*, 2014; Niemeyer *et al.*, 2023), *political representation* (Fenno, 1978; Ferrín and Kriesi, 2016; Esaiasson *et al.*, 2017), *misinformation, disinformation, fake news, and rumors* (Nyhan and Reifler, 2015; Berinsky, 2017; Lazer *et al.*, 2018; Vaccari *et al.*, 2023), *political explanations* (McGraw, 1991; Marietta, 2008; Grose *et al.*, 2015; Broockman and Butler, 2017; Hinterleitner and Sager, 2017; Peterson and Simonovits, 2017; Vössing and Weber, 2019; Traber *et al.*, 2020; Bakker *et al.*, 2021; Vössing, 2021a; de Fine Licht *et al.*, 2022), and *elite influence on public opinion* through other mechanisms such as framing (Chong and Druckman, 2007) and policy information (Bullock, 2011).

The article develops the concept of argument-stretching, it outlines a comprehensive theory of the effects of argument-stretching on public opinion, and it uses a series of experiments to test the predicted effects in varying samples and contexts. The experiments provide evidence for the theory, which describes responses to argument-stretching as a process of *impression formation*, in which recipients of an argument-stretched message add the negative impression created by a stretched argument to an overall tally of *account satisfaction*, which then prompts more negative views of policies and politicians associated with the argument.

In the following *second part* of the article, I begin by developing the concept of argument-stretching and I show how it contributes to existing treatments of truth in political statements. On this background, I outline an *impression-formation theory* to explain the effects of argument-stretching on public opinion, I state my hypotheses, and I show how my work contributes to existing scholarship concerned with the validity of political statements and political attitudes. In the *third part* of the article, I outline my research design and the protocols of three experimental studies, which randomly assign participants to either an *argument-stretched* or a *non-argument-stretched* justification given by a politician in support of a controversial policy (of European integration). Studies 1 and 3 are conducted in a controlled laboratory setting using diverse pools of over 300 participants, while study 2 is a survey experiment with a sample of 1306 participants that is representative of the German voting-age population. Study 3 introduces an opposing view and manipulates its relative weight as an additional treatment. The *fourth* part of the article reports the data analysis. The *fifth* part summarizes my findings and discusses some of their implications.

Argument-stretching and public opinion

Argument-stretching is a subtle violation of the validity of an argument. It occurs when a political actor makes a statement that contains a slightly but not glaringly invalid claim about the effect of an action on an outcome. For instance, the *policy justification* 'transnational integration (*policy*)

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[2]I am using "account" (Bennett, 1980) and "explanation" (McGraw, 1991) interchangeably. Both terms identify arguments in which someone gives a reason for a political action (such as endorsing a policy or expressing an opinion). A "justification" is a type of explanation (respectively account). It advertises an action as genuinely *desirable* and highlights its *positive impact*.

will improve border security (*justifying goal*)' is an argument that endorses a policy by suggesting that it has a positive effect on a political goal. Argument-stretching is about the causal link *between the two components* that constitute the pillars of an argument. In policy justifications, it identifies a situation in which the validity of the causal claim that the (*good*) policy advances the (*desirable*) goal is impaired, but only slightly, and not so much as to constitute an outright lie.

Judgments of what is valid and invalid can be made objectively or subjectively. An objective approach uses generalizable standards, such as editorial procedures, principles of logic, or rules for the treatment of evidence, to judge the validity of political statements (Biro and Siegel, 2006), while a subjective approach assesses validity based on what the recipients of an argument believe to be true or false. For instance, the argument 'transnational integration will improve border security' is stretched but not glaringly invalid in the (subjective) eyes of a representative sample of German voters. They give the argument an average validity rating of 46 out of 100, which indicates that the argument is stretched, since it is noticeably (but not by a large glaring margin) below the average of the most common arguments for European integration (50.4).[3]

The concern of the concept of argument-stretching with *arguments* and *slight violations of validity* adds to the focus of existing research and public debate on facts (instead of arguments) and clear misrepresentations (as opposed to stretching the truth). Both facts and arguments are important for political debate, but they constitute different types of political statements with varying properties and implications (Vössing, 2021b). Alleged *facts* (for instance, 'illegal border crossings have increased by 12 % in 2018' or 'we need more national border controls') are *atomic component claims,* while an *argument* is a *molecular connection claim* about an alleged effect of one component on another (for instance, 'extending national border controls will decrease the number of illegal border crossings'). The focus of existing scholarship on facts at the expense of arguments is apparent in the most prominent body of research about truth and politics, which analyzes the intentional dissemination of clearly invalid factual claims through fake news (Lazer *et al.*, 2018), misinformation (Nyhan and Reifler, 2015), disinformation (Vaccari *et al.*, 2023), and rumors (Berinsky, 2017), but it also features in other lines of research concerned with the validity of political statements, such as studies of preference falsification (Kuran, 1997) and false credit claiming (Cobb *et al.*, 2013).

The health of democracy depends on the validity of factual claims, and this broadly shared conviction of democratic theorists and activists has become not only a rallying point in the debate about fake news, misinformation, disinformation, and rumors, but also the focus of many practical efforts to safeguard democracy such as fact-checking websites and policies prohibiting false claims on social media. However, while there are many prominent fact-checking websites, for example, nothing comparable exists for scrutinizing the veracity of arguments. There are no prominent argument-checking websites, and this is indicative of the focus of public debate and existing research on the validity of facts. One reason for the emphasis on facts could be that their validity is easier to check than the validity of arguments. Alleged facts are singular and separable (atomic) claims that can be investigated and checked one by one. Arguments, by contrast, are (molecular) connection claims that contain at least two components as well as a causal link between them. This makes arguments 'more complicated' than facts (Hochschild and Einstein, 2015: 586) and because of that harder to verify.

Facts are easier to evaluate than arguments not only for professional fact-checkers but also for regular citizens. This, in turn, makes misrepresentations of facts generally more apparent, so that citizens feel perceived violations of validity more intensely for facts than for arguments. However, even though the misrepresentation of facts is more obvious, valid arguments are at least as important as valid facts for the health of political debate and democracy. Arguments allow voters to distinguish and evaluate different political agendas, because at the most fundamental level, political agendas vary as a result of making different claims about policies and their likely

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[3]See study 2 in the "research design" section for details about the survey.

consequences. In other words, political agendas are defined by the arguments they contain. The arguments of political parties and politicians highlight not only the policies they endorse but also the goals they propose to pursue, and by establishing connections between policies and goals, arguments allow voters to judge the competence of parties and candidates to make convincing cases for political agendas that realistically pursue desirable goals with suitable policies.

The concept of argument-stretching adds to the existing set of concepts in political analysis not only by focusing on arguments (instead of facts) but also by highlighting subtle (instead of stark) violations of validity. It is based on a view of validity as a continuum rather than a binary distinction. Existing studies of fake news (Lazer *et al.*, 2018), misinformation (Nyhan and Reifler, 2015), disinformation (Vaccari *et al.*, 2023), and rumors (Berinsky, 2017) as well as studies of false credit claiming (Cobb *et al.*, 2013) and preference falsification (Kuran, 1997) focus on the end points of the validity continuum by contrasting the clear and verifiable truth to the clear and verifiable falsehood of factual claims. This type of research is important and insightful, and I argue that it can be productively accompanied by the concept of argument-stretching with its focus on the space between absolute truth and absolute falsehood.

Studies of 'argument strength' (Petty and Cacioppo, 1986; Rydell and McConnell, 2005) constitute one line of research that systematically investigates the validity of arguments. However, this research shares the focus on glaring invalidity (and the underappreciation of subtle violations of validity) with the existing research about facts. Zaller (1992: 47) famously noted that studies of argument strength typically contrast *exceptionally valid* to *glaringly invalid* arguments, while arguments in real-world political debates will always have *reasonably high levels of validity*. A stark binary vision of validity is better suited for the analysis (and verification) of facts (which are more likely than arguments to be either false or true), while the analysis and verification of arguments requires a focus on subtle violations of validity provided by the concept of argument-stretching. Overall, the introduction of the concept of argument-stretching makes it possible to analyze the underappreciated effects of arguments (as opposed to facts) and truth-stretching (rather than obvious misrepresentations) on public opinion, political debate, and the health of democracy.

The effects of argument-stretching

Argument-stretching might be subtle, but it should not be too subtle to register. I would expect people to notice it and adjust their opinions about the perpetrators and the actions defended in argument-stretched accounts into the negative. I suggest that this happens because argument-stretching creates broadly negative impressions about an argument in people's minds. These impressions then reduce people's satisfaction with the argument they were given, and they become more critical of the person giving the argument and of the action defended by it.

This model of argument-stretching implies that responses to stretched arguments are not instrumentally rational. People are simply displeased with the argument's flawed validity, and they add the negative impression associated with the displeasure to a mental tally of judgments about the argument, that is their *account satisfaction* (McGraw, 1991). The considerations flowing into the tally are not systematically cross-tabulated. They are added to the tally, and the tally is used on the spot when its owner needs to make judgments about persons and actions related to the argument (McGuire, 1985; Zaller, 1992). For instance, when people decide what they think about a policy endorsed in an argument (their level of *policy support*) or a politician making the argument (*politician support*), they might *add* the negative impression prompted by an argument-stretched message (in the form of a low *validity judgment*) to other impressions, for example the view of the goal that was invoked to justify the policy (*goal support*).

Impression formation can broadly be classified as a *more heuristic* form of persuasion, falling into the nonsystematic half of dual-process models (Grofman, 2020). The general understanding of persuasion as a process of impression formation is based on the idea that political messages deliver a range of inputs, which create spontaneous impressions that are then brought to bear on

relevant attitude objects (McGuire, 1985; Zaller, 1992). McGraw (1991) applies the principle of impression formation to the study of political explanations, focusing on the impressions created by the *explanation at large.* She distinguishes different categories of explanations, and she argues that some explanations (for instance, value-based justifications) are more effective in boosting a politician's reputation after debatable behavior (such as endorsing a controversial policy) because they are inherently better suited for that purpose.

Areni and Lutz (1988) and Petty and Wegener (1991) show how different *components* of political arguments create separate and accumulating impressions. They propose that the strength (meaning persuasiveness) of an argument endorsing some measure (such as an action, a product, or a policy) will result from the sum of one judgment about the 'desirability of the alleged consequence' of the measure and a second judgment about the 'likelihood of the consequence' occurring as a result of the measure (Petty and Wegener, 1991). They suggest that people's views about these components of an argument have separate and additive effects on people's opinions about attitude objects related to the argument. Argument-stretching constitutes an event that decreases people's trust that the alleged consequence of the measure is likely to occur; or in other words, it has a negative effect on people's judgments about the validity of an argument. It adds to a range of other impressions potentially generated by exposure to an argument, including but not limited to opinions about the desirability of an alleged consequence of a measure. In policy justifications, the measure is a policy, and its alleged consequence is the goal invoked to justify the policy.

The theory of impression formation suggests that argument-stretching has a negative effect on attitude objects people associate with the stretched argument. In the case of policy justifications, these objects include the policy that is being justified and the politician justifying the policy. The effect is negative, because argument-stretching creates a negative impression about the argument, which is then translated into lower levels of support for the policy and the politician connected to the argument. The *negative direct effects of argument-stretching* predicted by the theory of impression formation can be summarized in the following two hypotheses:

HYPOTHESIS 1 (politician support): A politician who engages in argument-stretching will lose public support.

HYPOTHESIS 2 (policy support): Public support will fall for a policy that was endorsed by an argument-stretched justification.

The theory of impression formation also facilitates the following hypothesis about the *process of opinion formation* that highlights the mediating function of account satisfaction:

HYPOTHESIS 3 (process): The effects of argument-stretching on attitudes are mediated through a process in which a negative impression caused by argument-stretching diminishes satisfaction with the argument-stretched account, which then reduces support for people communicating the explanation and policies justified by it.

By developing and then testing theoretical expectations about the effects of argument-stretching on public opinion, the article contributes to scholarship about truth in politics and the connections between political statements and citizen views. To begin with, the article adds to existing research about the effects of invalid facts on public opinion. We know from this research that fake news (Lazer *et al.*, 2018), disinformation (Vaccari *et al.*, 2023), and rumors (Berinsky, 2017) can have strong and distorting effects on citizen views, and that corrections of misinformation often fail to fully repair the initial damage from spreading falsehoods (Nyhan and

Reifler, 2015). My analysis of the effects of argument-stretching expands this line of research that focuses on straightforward facts and clear misrepresentations by showing how even subtle violations of the validity of arguments (which are more complex than facts) can shape public opinion.

In addition, while most of the existing studies investigate the extent to which misrepresentations are believed (Nyhan and Reifler, 2015) and then possibly disseminated (Vaccari et al., 2023), I approach the topic from a different angle by studying whether the communication of invalid claims harms the perpetrators and their policy agendas. With this approach, my research speaks to deliberative and representative theories and analyses of democracy (Ferrín and Kriesi, 2016; Esaiasson et al., 2017; Niemeyer et al., 2023; Steenbergen et al., 2003), which emphasize the importance of valid arguments for democratic discourse and accountability. If argument-stretching reliably produces negative judgments about stretching politicians and their policy agendas, democracy would have a self-correcting system in place that might even help suppress argument-stretching in the long run (I will revisit this point in the conclusion).

Moreover, the analysis of argument-stretching adds important detail to the existing studies of argument strength. These studies conflate variation in validity with other features of arguments, for instance their relevance and their usefulness (Lee and Kim, 2017) in the encompassing concept of 'strength' (meaning persuasiveness). Isolating validity from other properties of arguments in my analysis of argument-stretching makes it possible to show how validity as a separate concept contributes to argument strength and attitude change.

Finally, my synthesis of theories of political persuasion (McGuire, 1985; Zaller, 1992) with a model of the structure of arguments (Areni and Lutz, 1988; Petty and Wegener, 1991; Vössing, 2021b) allows me to detail the specific contributions of different components of arguments to persuasion and public opinion. More specifically, I argue that judgments about justifying goals and the validity of causal effects claimed in a justification have separate (and cumulative) effects on attitudes, and I single out the particular effect of validity judgments prompted by argument-stretching for theoretical consideration and empirical analysis in this article. This elaborates on existing research about political explanations (McGraw, 1991; Broockman and Butler, 2017), which highlights the explanation at large and variation between types of explanations, as well as on studies of other mechanisms of elite influence, which analyze entire policy messages (Bullock, 2011) or frames (Chong and Druckman, 2007) rather than separate components of these political statements.

Research design

I conducted three experiments to test my theoretical expectations. The studies apply the same research design (illustrated in Fig. 1) using equivalent treatment materials.[4] Variations in participants and setup were added to the basic template in different studies for a comprehensive analysis of argument-stretching in different groups of people and under varying conditions. The research design makes it possible to estimate the *effect of variation between stretched and non-stretched arguments (the treatment)* on *validity judgments about the treatment* to establish the treatment's effectiveness. It facilitates tests of the *immediate effects of the treatment* (message-based approach) and *of validity judgments about the treatment* (recipient-based approach) on the dependent and mediating variables.[5]

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[4]For reproductions, see online appendices 1.1 (study 1), 2.1 (study 2), and 3.1 (study 3).

[5]Note that both approaches (message-based and recipient-based) rely on "subjective" judgments of the validity of arguments by participants. An "objective" approach that is recipient-based would entail (currently unavailable) physiological measures of perceived validity, while an approach that is "objective" and message-based could be conducted using expert judgments.
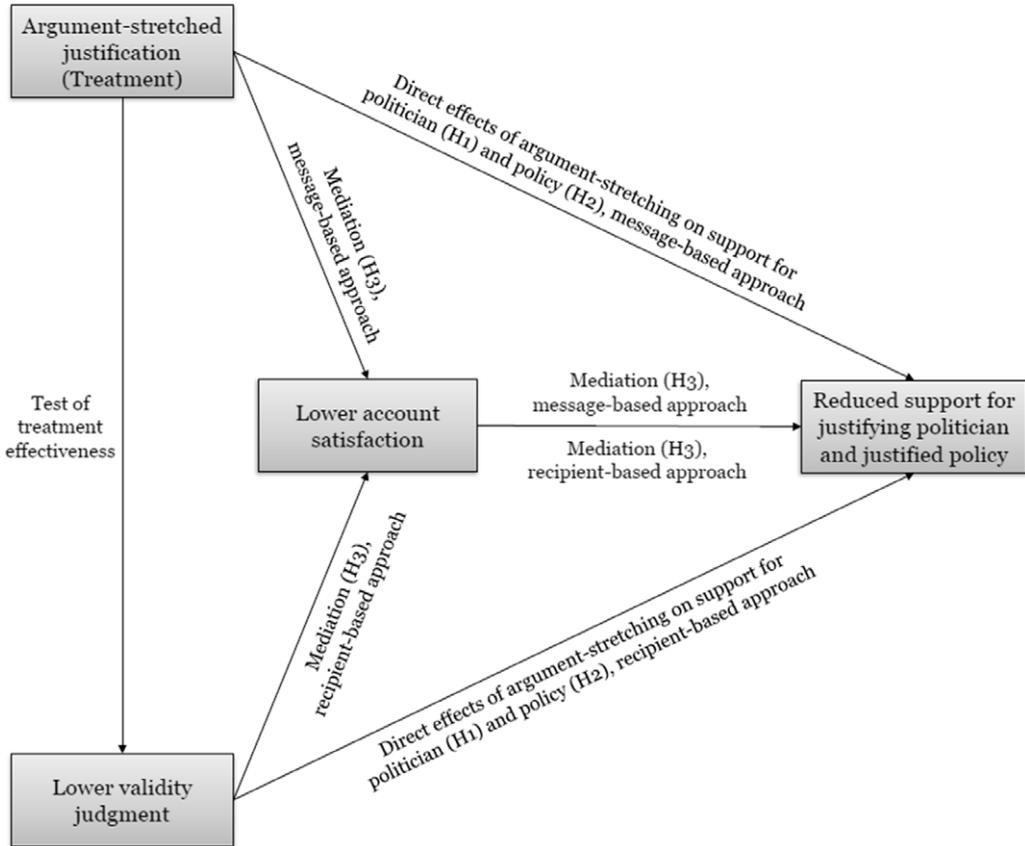
Figure 1. Overview of variables and estimated effects.

Study 1

The first study offers an initial test of the effects of argument-stretching using a medium-sized sample of participants in a laboratory setting. 332 participants were recruited for the study through classified ads and message board announcements. The sample reflects the entire diversity of the German electorate, with adequately large and balanced subgroups of varying age cohorts, gender categories, education levels, and social classes as well as meaningful variation in key political, social, and personal dispositions (see appendix 1.5). Participants entered the experimental lab in the Institute of Social and Political Sciences at Humboldt University Berlin, where the experiment was administered at computer stations through a browser-based interface. Informed consent was solicited, and the protection of participants (in all three studies) was guaranteed in accordance with local regulations, the 'principles and guidance for human subjects research' published by the American Political Science Association (APSA), as well as the guidelines prescribed by a typical Institutional Review Board (IRB). Participants were compensated (at a value of 10 to 15 Euro), and confidentiality of responses was guaranteed.

In the experiment, participants first answered a battery of pre-treatment questions before reading a mock newspaper article that was used to deliver the treatment. After the treatment article and manipulation checks, participants answered questions measuring the two dependent variables (*policy support, politician support*) and the mediator variable (*account satisfaction*). The three variables are measured using an *evaluation thermometer* ranging from 0 (most negative) to 100 (most positive). The final section contained questions that would not be affected by the

experimental treatment. After the completion of the experiment, participants received a full debriefing explaining the nature and purpose of the study.[6]

The article delivering the experimental treatment appears as a news item from a regional newspaper covering a vote in the European Parliament (EP) about the introduction of a so-called 'Euro-tax.' The policy is described as a controversial measure that would advance European integration by giving the European Union (EU) its own source of revenue independent of the control of its member states. The Euro-tax thus represents an acute political cleavage dividing supporters and opponents of supranationalism. The article explains that the EP narrowly endorsed the Euro-tax, and that Herbert Brueckner was one of the Members of European Parliament (MEP) who voted in favor of the policy. The article then reports a verbatim quote in which Brueckner justifies his decision. The justification he uses varies between *argument-stretched* and *not-argument-stretched* versions. Participants are randomly assigned to receive either one or the other version of the treatment.

To make sure that treatment effects are not an artifact of a specific justification, I varied the content of justifications (that is, the goals invoked to justify the policy) in each of the two treatment categories, and I tested (successfully) whether the justifications performed as expected by asking participants how valid they found them (using a 0–100 thermometer scale, average validity judgment 58.9, see appendix 1.3.1). In the *not-argument-stretched version* of the treatment, the MEP claims that the Euro-tax advances either social justice (validity judgment 65.7), European economic benefits (64.9), or European identity (64). In the *argument-stretched version* of the treatment, he claims that the Euro-tax advances either national economic benefits (49.7) or free markets (50).[7]

I selected justifications that are widely used in the political debate about European integration. Moreover, the selection was informed by expected validity judgments established through a casual survey in a convenience sample. Finally, I made the selection based on the findings of previous studies, which show that justifications invoking *values* or *collective benefits* are likely to be judged as the most valid (McGraw, 1998). Including only these two kinds of justifications in the treatment allowed me to make sure that participants received at most slightly invalid (that is, argument-stretched) rather than glaringly invalid arguments, and that the difference in validity judgments between stretched and non-stretched arguments would be narrow. For a test of the effectiveness of the treatment and its construct validity, I estimated how variation in treatment conditions affected individual validity judgments. The *argument-stretched* treatment condition obtained an average validity judgment of 49.8 on a 0-to−100 thermometer scale, compared to 64.9 for the *not-argument-stretched* condition (see Fig. 2). An F-test ($F = 30.3$; $P < 0.01$) and a test of group difference ($d = 15.02$; SE $= 2.73$; $P < 0.01$) demonstrate that the variation in validity judgments between the two treatment conditions is statistically significant.

Considering this evidence, I would argue that the treatment was effective and that it represents the theoretical construct (argument-stretching) it is supposed to represent. To begin with, using face validity as a benchmark we can see that the observable difference in validity judgments is statistically significant and more than trivial. However, it does not amount to *a glaring difference*, which would be much larger than the 15 points on a 101-point-scale we observed for our two treatment conditions. We can also look to prior research as a yardstick. As explained above, Zaller (1992: 47) emphasized that political arguments in the real world of politics will always be reasonably valid. The justifications I use in the experiment feature variation in validity judgments, but they are all suitable for real political discourse with *at least reasonably high levels of validity*.

Further empirical analysis of treatment delivery shows that key participant characteristics are equally distributed across treatment conditions (indicated by nonsignificant F-tests listed in

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[6]For reproductions of the debriefing see appendices 1.1.4, 1.1.5 (study 1), 2.1.4, 2.1.5 (study 2), 3.1.4, and 3.1.5 (study 3).
[7]See appendices 1.1.1 and 1.1.2 to see how the randomly assigned justifying goal appears in the treatment article for study 1 (as well as appendices 2.1.1 and 2.1.2 for study 2, and appendices 3.1.1 and 3.1.2 for study 3).
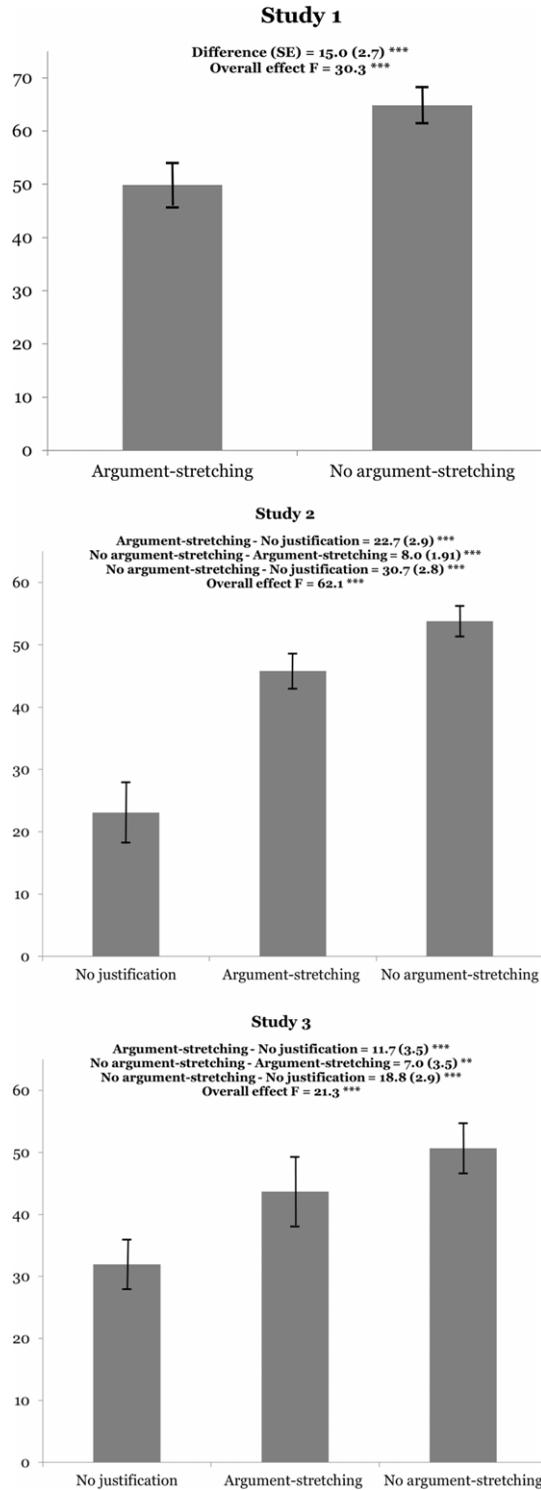
Figure 2. Effects of argument-stretching on judgments of argument validity (treatment effectiveness).
Notes: Diagrams display judgments of argument validity (0 to 100) for treatment conditions with 95 % CI, differences between conditions (with SE), and F-values. Sig (p): ** 0.05; *** 0.01. See appendices 1.3.2, 2.3.2, and 3.3.2.

appendix 1.5). This means that no extraneous factor confounded the treatments, and it shows that the randomization procedure was successful in creating homogenous groups for a valid analysis of treatment effects. Finally, the experiment randomly varied the party affiliation of the MEP between participants, which improves internal validity as well as experimental and mundane realism.[8]

Study 2

The second study replicates the research design of the first study. To facilitate a test of my theoretical expectations with a high degree of external validity, study 2 was conducted as a survey experiment with a large group of 1306 participants, who are representative of the German voting-age population. The experiment was carried out by *Forsa*, an established and reputable polling firm, using their high-quality personally recruited panel. Study participants are stratified to the features of the population based on age, residence (across 16 states), gender, and education. In addition, empirical analysis shows that the sample features the same balanced sub-groups as study 1 on a wide range of characteristics (see appendix 2.5). Participants completed the experiment using the same on-screen visuals and browser-based access as in study 1, and the treatment is delivered using the same mock newspaper article.

Participants in study 2 are randomly assigned to receive one of *three* different versions of the treatment article. In the first version (same as in study 1), the MEP uses an *argument-stretched* justification to explain his support for the Euro-tax; in the second version (also same as in study 1), he uses a justification that is *not argument stretched*; in the third version (newly added in study 2), the article states that 'Brueckner voted yes (*for the Euro-tax*) but did not give an explanation for his decision.' Adding a *no justification* condition makes it possible to establish a baseline against which the potential benefits and costs of communicating with voters can be compared.

The larger sample in study 2 allowed me to introduce greater variation of justifying goals. The argument-stretched condition includes the goals 'security' (validity judgment 46), 'European values' (46.1), and 'benefits for home country' (45.3), while the nonstretched condition includes 'peace' (54), 'democracy' (52.6), 'benefits for Europe' (54.8), and 'performance of EU institutions' (53.9). The average validity judgment is 50.4 (see appendix 2.3.1). The goals were selected because they emerged as the most common justifying goals from a quantitative text analysis, in which a group of human coders hand-coded the features of 3162 justifications for policies advancing European integration that were used in the debates about a European constitution, migration policy, and the Euro currency. The selection was cross-validated (and found to be consistent) with the findings of study 1 and the rationale (already applied in study 1) of selecting justifications that invoke either values or collective benefits as justifying goals.

The treatment groups were homogenous on a wide range of variables (see appendix 2.5), the party affiliation of the MEP was randomized again, and the treatment was as effective as in study 1 in representing the contrast between stretched and non-stretched arguments. An F-test (F = 17.4) and a test of group difference (d = 8.02, SE = 1.91) show that validity judgments between the two conditions vary as intended, at a level that is statistically significant ($P < 0.01$) and with a degree of variation that is indicative of argument-stretching rather than glaring differences in validity.

Study 3

The third study replicates the argument-stretching treatment from the previous study. What is new about study 3 is the introduction of an opposing point of view and a *context treatment* that varies the relative weight of the opposing point of view between participants. Participants of study 3 read a treatment article in which the expression of support for the Euro-tax by Herbert

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[8]Parties included are the Christian democratic *CDU*, the social democratic *SPD*, the socialist *Left Party*, and the left-libertarian *Green Party*, all credible representatives of pro-European policies.

Brueckner is contrasted with the rejection of the Euro-tax (and a negative vote in the EP) by a second MEP from the same region (introduced as Frank Wilmers). Participants are not only randomly assigned to one of the three versions of the argument-stretching treatment linked to Brueckner (*stretched*, *not stretched*, *no justification*), but also to one of two versions of the *context treatment*. In the first version, Wilmers offers an opposing point of view but *no counter-justification* in support of his view and vote. In the second version, he offers an opposing point of view as well as a counter-justification (thereby increasing the weight of his position).

Study 3 was conducted with 348 participants using the same protocols as study 1. The sample reflects the diversity of the German electorate, and it features balanced subgroups on the same large number of variables as the first two studies (see appendix 3.5). Party affiliation is randomized in the same way as in studies 1 and 2. Moreover, study 3 also uses different justifications, although the variation is smaller than in studies 1 and 2, due to the smaller sample size and the introduction of a second treatment. In study 3, the *stretched* condition of the *argument-stretching treatment* includes a justification invoking the goal 'free markets' (validity judgment 43.7), while the *non-stretched* condition includes 'European identity' (49), and 'collective economic benefits' (52.5). The average validity judgment is 48.4 (see appendix 3.3.1). The counter-justifications of MEP Wilmers rely on random assignment of the same three goals.

Treatment groups were homogenous (see appendix 3.5), and randomization of party affiliation was carried out for both included politicians (with the additional precaution of never assigning them to the same party). The argument-stretching treatment turned out to be as effective as in studies 1 and 2. Average validity judgments of 43.7 (argument-stretched category) and 50.7 (not-argument-stretched) as well as statistically significant tests ($P < 0.05$) of overall variation (F = 4.47) and group difference (d = 7.02, SE = 3.52) show the intended meaningful but small (rather than glaring) variation between *argument-stretched* and *not-argument-stretched* treatment conditions.

Data analysis

I analyzed data from three experimental studies to determine whether argument-stretching reduces public support for politicians who stretch arguments (hypothesis 1) and policies that are justified with stretched arguments (hypothesis 2). To begin with, Fig. 3 shows how *politician support* varies between *argument-stretched* and *not-argument-stretched* experimental conditions. In study 1, an argument-stretching politician is 10.5 points less popular on a 0–100-point scale than a politician who uses a more valid (nonstretched) argument. In study 2, the difference is 6.1 points, and in study 3 it is 7.7. The estimates are statistically significant at $P < 0.05$. For further illustration, Fig. 5 displays the according OLS coefficient estimates for the "no argument-stretching" dummy variable (with "argument-stretching" as the reference category). The estimates are derived from $Y = b_0 + b_1$ *no argument-stretching* $+ e$ using two dependent variables ($Y_1 =$ politician support, as shown on the top left of Fig. 5, and Y2 = policy support on the top right).[9]

In addition to analyzing the effect of argument-stretched messages (message-based approach), I also estimated the effects of individual judgments of argument validity on politician support (recipient-based approach). The bottom half of Fig. 5 shows the coefficient estimates derived from $Y = b_0 + b_1$ *argument validity* $+ e$ for the two dependent variables ($Y_1 =$ politician support on the left and $Y_2 =$ policy support on the right). In study 1, the regression coefficient suggests that the difference between a perfectly negative judgment (0) and a perfectly affirmative judgment (1) of an argument's validity by its recipients yields a (statistically significant) increase of 47.8 points in politician support (on a 0–100-point scale). Politicians using arguments perceived as invalid suffer a considerable decline in popularity. The size of the reputational damage is even larger in the representative sample of study 2 (with a statistically significant difference of 58.1 between lowest and highest validity judgments). The damage remains significant and large (40.2) in study 3.

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[9]A "no justification" dummy variable is added to the model for studies 2 and 3.
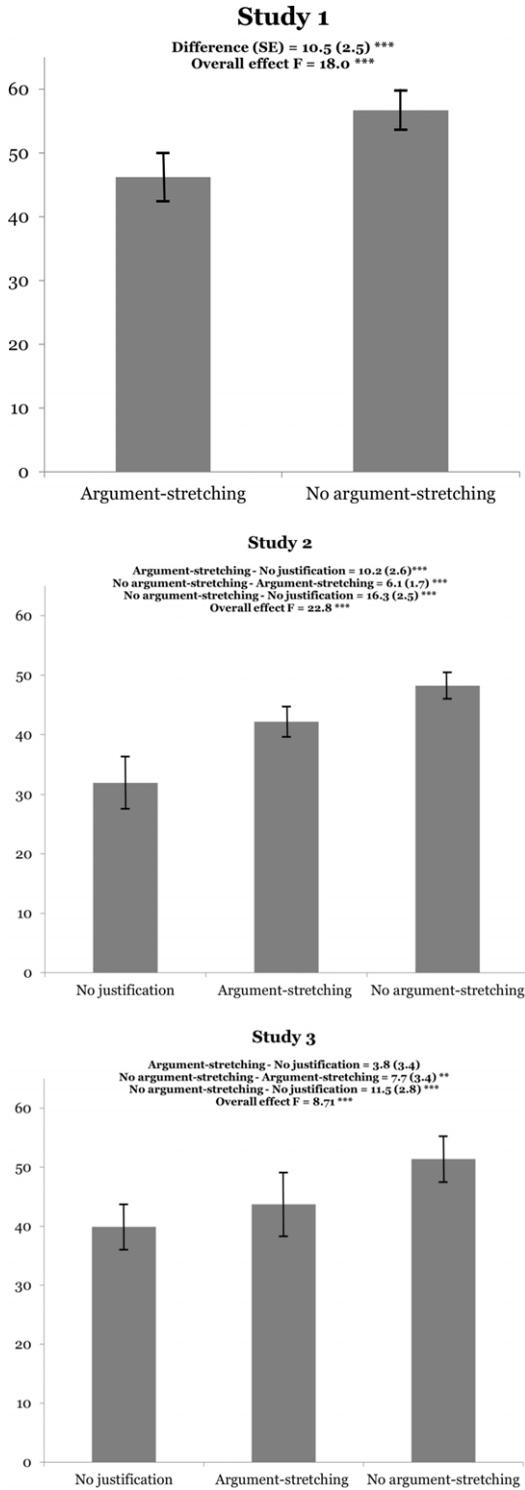
Figure 3. The direct effects of argument-stretched messages on politician support.
Notes: Diagrams display *politician support* (0–100 scales) for treatment conditions with 95 % CI, differences between conditions (with SE), and F-values. Sig (p): ** 0.05; *** 0.01 (see appendices 1.4.2, 2.4.2, and 3.4.2).
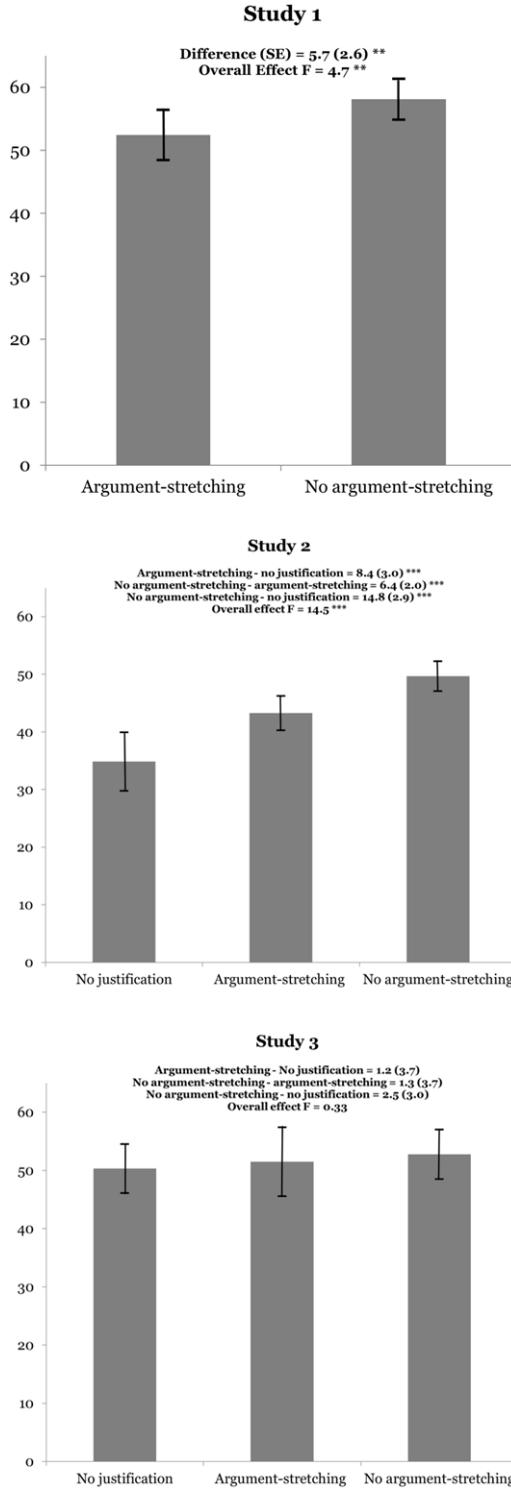
Study 1

Difference (SE) = 5.7 (2.6) **
Overall Effect F = 4.7 **

Study 2

Argument-stretching - no justification = 8.4 (3.0) ***
No argument-stretching - argument-stretching = 6.4 (2.0) ***
No argument-stretching - no justification = 14.8 (2.9) ***
Overall effect F = 14.5 ***

Study 3

Argument-stretching - No justification = 1.2 (3.7)
No argument-stretching - argument-stretching = 1.3 (3.7)
No argument-stretching - no justification = 2.5 (3.0)
Overall effect F = 0.33

Figure 4. The direct effects of argument-stretched messages on policy support.
Notes: Diagrams display *policy support* (0–100 scales) for treatment conditions with 95 % CI, differences between conditions (with SE), and F-values. Sig (p): ** 0.05; *** 0.01 (see appendices 1.4.2, 2.4.2, and 3.4.2).

Subjective-message approach
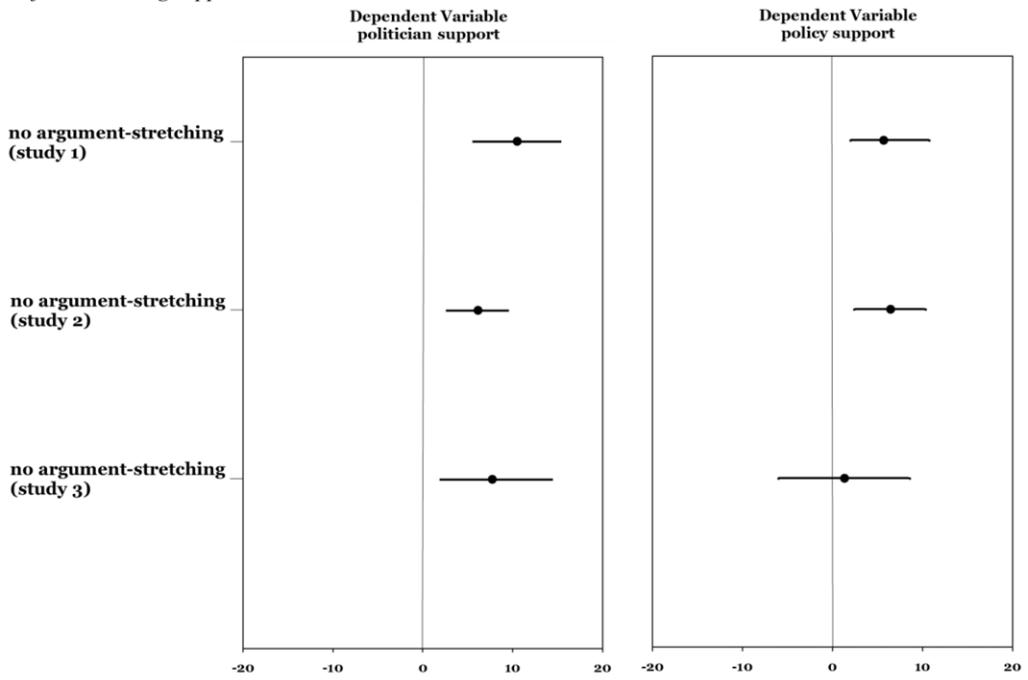
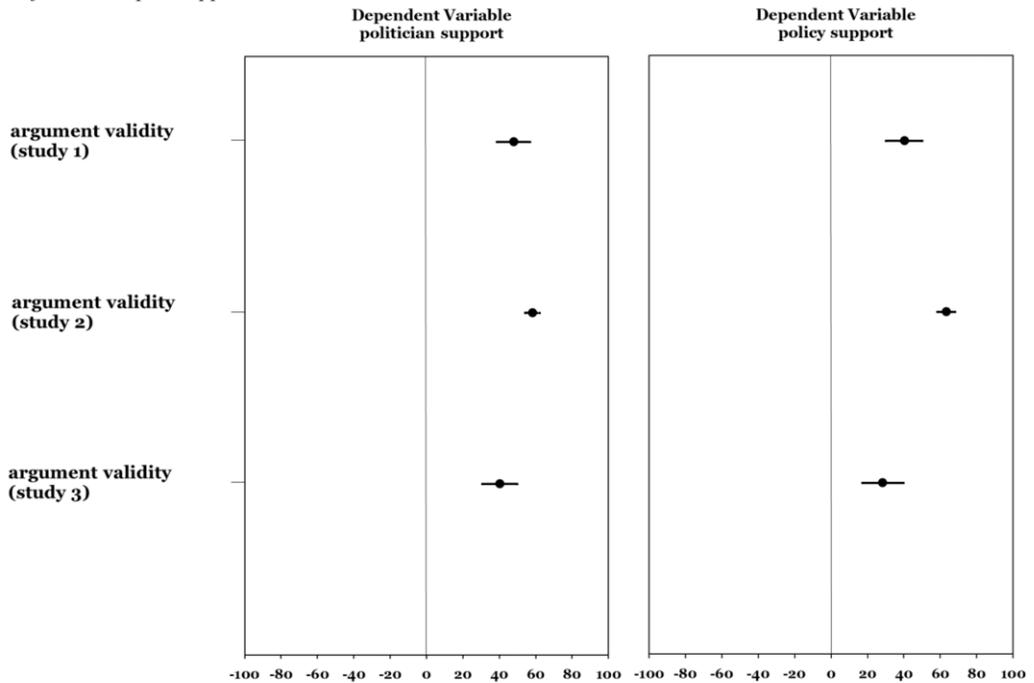*Subjective-recipient approach*

Figure 5. Coefficient estimates for the effects of argument-stretching.
Notes: OLS coefficients, 95 % CI, IVs 0–1, DVs 0–100. For estimated models, see online appendices 1.4.1 (models 1, 2), 2.4.1 (models 1, 2), 3. 4.1.1 (model 1), 3.4.1.2 (model 1), 1.4.3.1 (model 1), 1.4.3.2 (model 1), 2.4.3.1 (model 1), 2.4.3.2 (model 1), 3.4.3.1.1 (model 1), 3.4.3.2.1 (model 1).

The values shown in Fig. 4 demonstrate that argument-stretching also has a negative impact on *policy support*. In study 1, participants exposed to a stretched argument express support for the policy endorsed in the argument at a level that is 5.7 points below participants who received a non-stretched argument. In the representative sample of study 2, the difference is 6.4. Both estimates are statistically significant ($P < 0.05$). Analyses of the effects of individual validity judgments on policy support shown in Fig. 5 corroborate the message-based findings. In study 1, the step from lowest (0) to highest (1) validity judgment about an argument leads to a 40.1 point increase in support for the policy that is justified by the argument. In study 2, the increase is 63.2 points, and in study 3 it is 28 points. The coefficient estimates are statistically significant ($P < 0.01$).

The effects of argument-stretching on policy support and politician support in the three studies are average treatment effects, which are independent of individual differences between participants such as partisanship and ideology. This conclusion is warranted by random assignment of participants to experimental conditions. Moreover, further analysis shows that the reported effects of argument-stretching persist when individual differences of partisanship and ideology (*party cueing, goal support,* and *prior policy support* variables) are included as controls (see appendices 1.4.3, 2.4.3, and 3.4.3).

Overall, the analyses provide robust evidence for the hypothesized effects of argument-stretching on public opinion. The estimates shown in Fig. 5 summarize the evidence for the negative effects of argument-stretching on policy support and politician support predicted by a theory of impression formation. The direct effects expected by impression-formation theory occur in eleven out of twelve investigated scenarios (two dependent variables * two ways of identifying argument-stretching * three studies). Only one unique scenario does not conform to the pattern. This is in study 3, where no significant negative effect of argument-stretching on policy support occurs, at least not for the message-based measurement (see also Fig. 4). Participants who received stretched arguments did express lower levels of policy support (51.5) than participants who received non-stretched arguments (52.8), but the difference between the two conditions is small (1.29) and not statistically significant.

The absence of a significant effect of argument-stretching (when the concept is identified using a message-based approach) on policy support in study 3 suggests that the presence of a counter-position (unique to study 3) might constitute a potential scope condition for the direct effects of argument-stretching on policy support predicted by the theory of impression formation. Adding further weight to the opposing point of view by supporting it with a counter-justification does not noticeably change the effect of argument-stretching on policy support. The coefficient estimate for the *no-argument-stretching* dummy variable is positive (2.44) for respondents that are randomly assigned to receive a counter-justification, while it is negative for respondents that did not receive it (−2.14), but neither one of the estimates is statistically significant. Still, the counter-position alone is enough to prevent the negative effect of a stretched argument (for the original position) on public opinion. If this finding were to hold in future studies, it would show that strategic politicians benefit from holding back their views whenever they expect opponents to harm their own reputation and public support for their policies with stretched arguments.

The process of impression formation

Impression-formation theory suggests that the effects of argument-stretching on public opinion are mediated by *account satisfaction* (hypothesis 3). I tested the mediation hypothesis using both *message-based* and *recipient-based* approaches to identify argument-stretching (see Fig. 6). According to the message-based approach, an argument-stretched justification (A) causes lower account satisfaction (C), which in turn leads to a decline in politician support (D1) and policy support (D2). According to the recipient-based approach, lower individual validity judgments about a justification (B) prompt lower account satisfaction (C), which in turn leads to a decline in politician support (D1) and policy support (D2). I also tested a comprehensive mediation
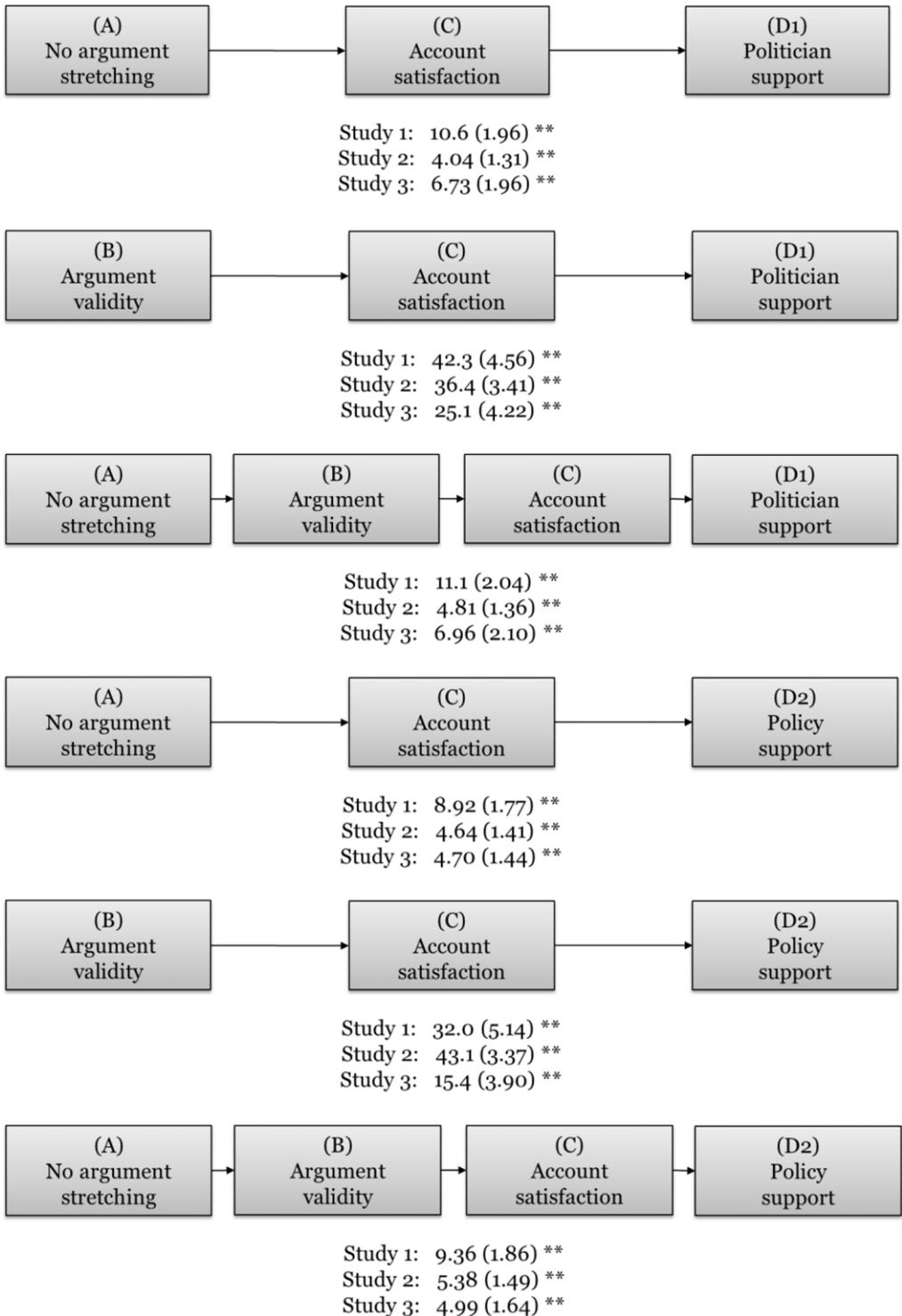
Figure 6. Estimates of mediation effects from formal bootstrapping tests.

Notes: Figures display mediation effects from formal bootstrapping tests proposed by Hayes (2017), with SE in parentheses and ** for significance at $P < 0.05$. Number of bootstrap samples is 10.000. See appendices 1.4.4 (study 1), 2.4.4 (study 2), and 3.4.4 (study 3) for full models.

argument in which both the nature of the justification and the resulting validity judgment are included. In this model, an argument-stretched justification (A) causes lower validity judgments about the justification (B), which prompts lower account satisfaction (C), which in turn leads to a decline in politician support (D1) and policy support (D2).

I subjected the six mediation models to a *formal bootstrapping test* developed by Hayes (2017). The test calculates the 'total effect' of the independent on the dependent variable (H) and then the 'direct effect' of the independent on the dependent variable while controlling for the mediator (I). The 'indirect' (mediation) effect (J) is the difference between H and I. The value for J thus identifies the extent to which the inclusion of the mediator variable deflates the effect of the independent on the dependent variable. The larger the value, the greater the deflation and therefore the degree of mediation that is taking place. In the end, a bootstrapping procedure is used to determine confidence intervals and standard errors for the mediation effect. The mediation effects, standard errors, and significance levels ($P < 0.05$) I estimated using the bootstrapping procedure are shown in Fig. 6.

To begin with, the analyses produce clear evidence that the effect of an argument-stretched message (using a 'no argument-stretching' dummy variable) on *politician support* is mediated through account satisfaction (A-C-D1). The mediation effect ($P < 0.05$) is 10.6 ($\text{SE} = 1.96$) in study 1, 4.04 ($\text{SE} = 1.31$) in study 2, and 6.73 ($\text{SE} = 1.96$) in study 3. Testing for mediation with a recipient-based approach produces the same results. The effects of individual judgments of argument validity on politician support are clearly mediated by account satisfaction in all three studies. The mediation effect ($P < 0.05$) registers at 42.3 ($\text{SE} = 4.56$) in study 1, 36.4 ($\text{SE} = 3.41$) in study 2, and 25.1 ($\text{SE} = 4.22$) in study 3. The conclusion that mediation is taking place holds when argument-stretching is broken down into its message-based and recipient-based components to produce a four-step mediation model (A-B-C-D1). The total mediation effect ($P < 0.05$) of the 'no argument-stretching' dummy variable on politician support through two consecutive mediators (first argument validity, and then account satisfaction) amounts to 11.1 ($\text{SE} = 2.04$) in study 1, 4.81 ($\text{SE} = 1.36$) in study 2, and 6.96 ($\text{SE} = 2.10$) in study 3.

The bootstrapping test also indicates that the mediation hypothesis holds for *policy support* as the dependent variable. The analysis shows that the effect of the 'no argument-stretching' dummy variable (A) on policy support (D2) is mediated by account satisfaction (C) at statistically significant levels ($P < 0.05$) of 8.29 ($\text{SE} = 1.77$) in study 1, 4.64 ($\text{SE} = 1.41$) in study 2, and 4.70 ($\text{SE} = 1.44$) in study 3. The effects of individual judgments of argument validity (B) on policy support (D2) are also mediated by account satisfaction ($P < 0.05$) in study 1 (32.0, $\text{SE} = 5.14$), study 2 (43.1, $\text{SE} = 3.37$), and study 3 (15.4, $\text{SE} = 3.90$). Finally, the comprehensive mediation model (A-B-C-D2) yields statistically significant estimates of four-step mediation in study 1 (9.36, $\text{SE} = 1.86$), study 2 (5.38, $\text{SE} = 1.49$), and study 3 (4.99, $\text{SE} = 1.64$).

The analyses show that the process through which argument-stretching unfolds is generally consistent with impression-formation theory. The mediation effects suggested by hypothesis 3 occur for all three studies, both dependent variables, and different model specifications. The analyses also reveal larger mediation effects when *politician support* is the dependent variable. The impressionistic processing of political arguments is more common when people form opinions about politicians and less common when they form opinions about policies.

Conclusion and discussion

The analysis of data from three experimental studies showed that argument-stretching has a significant negative effect on people's opinions about politicians who stretch the argument (as proposed by hypothesis 1) and policies that are justified with stretched arguments (as proposed by hypothesis 2). The analysis also found that the two effects are mediated by account satisfaction in a process of impression formation (as proposed by hypothesis 3). In addition, the results of the third study point to a possible scope condition for the effects of argument-stretching through

impression formation. The study showed that the presence of an opposing point of view inhibits the (generally weaker) effect of argument-stretching on policy support, while leaving the effect on politician support intact.

Given that argument-stretching damages the reputation of argument-stretchers and their policies, why do politicians do it anyway? One explanation could be that some politicians are simply *ignorant* of what they are doing. They might also be creatures of *habit* who stretch arguments by repeating internalized (and inaccurate) scripts. That being said, argument-stretching can also be entirely consistent with the *strategic pursuit of self-interest*. Politicians are conflicted people who constantly have to negotiate different considerations. When it comes to making decisions about endorsing and justifying policies, politicians can boost public support in three ways, each of which corresponds to one component of a policy justification. They can endorse a popular policy, invoke a strongly supported goal to justify their endorsement, and make a non-stretched argument about the effect of a policy on a goal. In most political scenarios, it will be impossible to do all three things at the same time. Politicians might then decide to stretch an argument because they find the popularity of a policy and public support for a certain goal more important than making a valid causal claim.

Sometimes, politicians might just want to say something (for example, to simulate responsiveness, as Jacobs and Shapiro, 2000, suggested). In that case, they might opt for an argument-stretched account when silence is the only alternative. Study 2 shows that this is the rational thing to do because not justifying a policy prompts less favorable public responses than using an argument-stretched justification (see Figs. 3 and 4). It is important to emphasize this point. Argument-stretching might be the inferior course of action for self-interested politicians when the alternative is to make a better, that is, a nonstretched argument. But when the alternative is to just declare a policy position (without justifying it), argument-stretching is the superior choice. In study 2, politicians who use a stretched argument receive a rating that is 10.2 points more positive on the 0–100-point scale than the rating of politicians who simply state their position without justification. Support for a policy is 8.4 points higher when it is justified by a stretched justification instead of no justification (both differences are significant at $P < 0.01$). Politicians have strong incentives to talk and even to stretch their arguments when they do not have a non-stretched, more valid, justification at their disposal.

Besides, even when the scenario of using a non-stretched justification is the yardstick for comparison, politicians might still act rationally when they commit an act of argument-stretching. Their strategy will succeed even in the face of permanent damage from stretching an argument, whenever this is collateral damage that was necessary to achieve a different more valued objective. It is also entirely possible that the damage inflicted by argument-stretching on the popularity of politicians and their policies might not even be permanent. Self-interested politicians have little reason to avoid argument-stretching if its negative effects on specific actors and policies decay over time. The broader problem here is that even if the short-term negative effects of argument-stretching on specific actors and policies were to decay over time, *despecified* negative effects on democracy and the political class at large might very well persist and accumulate. If the despecified effects of argument-stretching pile up over time, while the specific effects on politicians and their agendas disappear, democracy would not have a self-correcting system against the damaging consequences of argument-stretching in place; and argument-stretching would not only harm democracy by undermining deliberation and accountability, it would also directly reduce support for democratic procedures and values.

The scope of my conclusions about the effects of argument-stretching on public opinion depends on the extent to which these effects occur across different issue domains (in addition to European integration, the issue used in my studies). Other issues might favor similar negative effects of argument-stretching and the mechanisms of impression formation I observed in the analysis of European integration, but they might also have properties that curtail or change these effects and mechanisms. For instance, the negative effects of argument-stretching might depend

on voters refraining from motivated directional reasoning (Taber and Lodge, 2006). Motivated directional reasoning happens, for instance, when voters disconfirm (to themselves) received input that is at odds with their dispositional priors (such as partisanship). In our case, this would mean that voters dismiss the stretched nature of an argument and decide to not let it (negatively) affect their judgment of the stretching politician and his or her policies, whenever they share the politician's partisan affiliation.

The persistent and considerable negative effects of argument-stretching in my three studies (even when controlling for partisan identification and ideological leanings) show that motivated directional reasoning does not suppress the negative effects of argument-stretching. However, this conclusion might be limited to the specific issue of European integration covered in the experiments or some broader class of issues it represents. For instance, motivated directional reasoning and disconfirmation bias in particular might be less prevalent for newer issues such as European integration and more prevalent for traditional partisan issues, say the welfare state or migration. This possibility cannot be dismissed and the best way to address this question is to conduct more studies focusing on different types of issues. However, I would argue that due to the evolution of the integration issue in the past three decades, it is not as removed from traditional partisan lines of conflict anymore as it was in the past (Kriesi *et al.*, 2006; Hooghe and Marks, 2009; Grande and Hutter, 2016; Hooghe and Marks, 2018). European integration should at least be broadly comparable to other more conventional partisan-charged issues, and there is good reason to believe that negative effects of argument-stretching will generally travel between the two categories of issues. Motivated directional reasoning through disconfirmation bias should be most powerful in preventing the negative effects of argument-stretching for singular and acute hot topics that might occur on any issue dimension or that might even be entirely removed from issue-based content. In the absence of such singular hot topics, I would expect to find processes of impression formation and negative effects of argument-stretching for all types of issue domains.

In addition to studying other issues and the role of motivated directional reasoning, future research could also look further into the connections between argument-stretching and other flaws of political statements. For instance, argument-stretching can be thought of as a specific case of the 'questionable cause' fallacy in argumentation, and it would be fruitful for the analysis of political arguments to compare the perception of argument-stretching by citizens and the severity of its effects to other fallacies, such as circular reasoning, the 'straw person', or the false premise (which can lead to causally impeccable but still extremely flawed arguments, for example the 'method in madness' type of argument described by Simon, 1983).

Another fruitful area of future research could be the nature of temporal horizons in argument-stretching. In my three studies, I conceived of the processing of negative impressions created by stretched arguments as a discrete event that occurs when people are exposed to a message. It is possible that the impression created at that time will persist in memory and get sampled on occasion for the expression of attitudes later on, as suggested by Zaller (1992). Alternatively, the impression might even leave a permanent imprint on a tally of account satisfaction that persists in the long run, and that serves as a reliable guide to the on-line formation of attitudes for extended periods of time, as suggested by Lodge *et al.* (1989). Future research could investigate the temporal horizons of argument-stretching by determining whether it is subject to memory-based or on-line patterns of attitude formation. Future research could also study other long-term ramifications of argument-stretching and the mechanics of its effects, including further moderating factors and the determination of tipping points. This includes the point at which an argument moves from valid to stretched, the point at which it moves from stretched to glaringly invalid, as well as the points at which argument-stretching and certain levels of validity begin to have negative effects.

Note. Replication data as well as an online appendix with reproductions of experimental materials, details of measurement, and documentation of statistical analyses will be made available at *Harvard Dataverse* (dataverse.harvard.edu/dataverse/vossing) and the author's website (sites.google.com/site/konstantinvossing).

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