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# Introduction

## LOST IN TRANSLATION?

Does the way we speak affect the way we think? It's a question that many people find intriguing, perhaps because it is so easy to find examples from everyday life where language seems to do just that—affect what we pay attention to, what we consider important, how we perceive events, and even whether we find jokes funny.

For example, imagine trying the following riddle on a Spanish-speaking friend: *Why did the boy throw the butter out the window? Answer: Because he wanted to see butter fly!* This clever play on words is easy to convey in English. But your Spanish-speaking friend might find it frustratingly difficult to appreciate the humor in it. That is because *mariposa*, the Spanish word for butterfly, fails to compactly deliver the punchline of *butter flying*. Alas, it is only in English that the riddle makes sense, since the mental associations that are needed for it to resonate are seamlessly contained in that language, but not to the same degree in Spanish.

This isn't just a matter of vocabulary or lexicon. If you were to ask a Russian-speaking friend, for example, to translate *the child ate the ice cream* into Russian for you, then you should prepare yourself to answer questions like *is the child a boy or a girl?* And *did the child eat all or part of the ice cream?* You might feel flustered by your friend's impertinence about these details. But, in order to express that *the child ate the ice cream* in Russian, one needs

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to know the gender of the child and whether they consumed all or only part of the ice cream (see also Boroditsky, Schmidt, and Phillips 2003). These *grammatical* quirks mean that your Russian-speaking friend's sense of this ice cream-eating child is more nuanced than yours, simply because of what is demanded by the strictures of their tongue.

Other instances carry more social weight. What follows is a fictionalized version of a real-life experience. One day, the child of one of this book's authors (the one without the accent marks) came home from school and said, "Mom, my friend, Jordan, doesn't want to be he or she. Isn't that how we talk at home about everyone else—nobody is he or she?" The child was right. At home, they speak Estonian: a language that does not grammatically oblige speakers to denote the gender of objects or people. Indeed, *he* and *she* are signified by the same pronoun. In the home of Estonian speakers—and speakers of other genderless tongues throughout the globe (Pérez and Tavits 2019; Prewitt-Freilino, Caswell, and Laakso 2012; Santacreu-Vasut, Shoham, and Gay 2013; Tavits and Pérez 2019)—people are not expected to grammatically signify the gender of objects or individuals, like they are when they speak Spanish or English. Their language does not direct them to distinguish children as *he* or *she*.

Now consider a similar conversation at an English-speaking home about a pair of students named Jordan. One Jordan originally self-identified as a girl, while the other Jordan still self-identifies as a boy:

CHILD: "Mom, we had a meeting today about Jordan . . ."

MOM: "Oh, yes? Which one, the boy or the girl?"

CHILD: "Eer . . ."

MOM: "Which one, he or she?"

CHILD: "Eer . . . , I don't know . . . , eer . . ."

INCREASINGLY FRUSTRATED MOM: "It's a simple question! HE or SHE?"

INCREASINGLY FRUSTRATED CHILD: "It's not a simple question!

Jordan is neither he nor she! That's the whole point, mom! Jordan doesn't want to be either a boy or a girl!"

The parent in this exchange was harshly struck by the realization that simple grammatical distinctions, encouraged by the use of gendered pronouns, can have an effect on one's expectations of the world. In this case, the mother's language conditioned her to expect that a child is always either "he" or "she," with very little room for other possibilities, such as being "neither a boy nor a girl."

These everyday examples underscore that grammatical nuances between tongues can draw our attention to different features of our environment, perhaps affecting how we construct and interpret the world around us. This is a fascinating prospect that linguists and cognitive scientists have not ignored and, as we claim in this book, one that political scientists should not overlook either. After all, language is fundamental to the human experience. Language production and comprehension is a large part of what we do on a daily basis as human beings. For example, Mehl et al. (2017) report that college students produce approximately 16,000 words per day. They listen to and comprehend at least as many words produced by their peers and others. Add to this all of the reading, writing, and social media interactions, and it becomes clear that humans use language incessantly, for large parts of each day. Given this scale, even small language effects could be potentially far-reaching and consequential. And because of this, a discipline that is studying humans, such as ours, cannot afford to ignore them.

Furthermore, political scientists readily admit and study the diversity in political structures, ethnic makeup, culture, economic systems, etc., yet tend to glance over the vast and systematic differences across languages. According to the most comprehensive catalogue of the world's languages, there are about 7,000 distinct tongues in contemporary use (Eberhard, Simons, and Fennig 2020), with these languages varying significantly in terms of grammar, metaphors, lexicons, and other dimensions. This represents a remarkable diversity in the linguistic practices of humans, a diversity that our discipline largely ignores at present. A cursory look at nuances between languages in the following three domains helps illustrate the enormous linguistic variation and the explanatory potential of it, in that even small linguistic nudges seem to have far-reaching consequences:

**Space:** When setting a table, an English speaker might say *the fork goes to the left of the plate*. However, a speaker of Kuuk Thaayorre, an aboriginal Australian language, would say that the fork goes *east of the plate* if they happen to be facing south, *west of the plate* if they are facing north, *south-west of the plate* if they are facing northwest, and so on, based on cardinal directions (Boroditsky and Gaby 2010). In turn, speakers of Telzatal, a Mayan language, might say that the fork needs to be *uphill of the plate* (Brown and Levinson 1993). Thus, while English speakers use egocentric frames of spatial reference, the other two languages use absolute frames. These nuances matter: speakers of languages that use absolute spatial references are more aware of their orientation and display better

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navigation skills—for example, they are less likely to get lost even in unfamiliar surroundings (Levinson 2003).

**Tenses and numbers:** English speakers use past, present, and future tenses when they speak. Not so in other tongues. In Finnish, for example, people regularly merge the future and present tense (Casasanto et al. 2004). In turn, speakers of Yagua, a Peruvian indigenous tongue, have five *past* tenses available, each denoting something that happened within a few hours; one day ago; within a few weeks; within a few months; or in a distant or legendary past (Payne 1997). Number distinctions (words for *one, two, three*, etc., as well as singular and plural) also seem so basic to English speakers. Yet in global comparison they are not. Pirahã, an indigenous language in Brazil's Amazonas, does not grammatically distinguish between numbers, including through pronouns (Everett 2012). Pirahã's words for quantities are ambiguous from the angle of English speakers. For example, the word *hói* can mean *one* or *a few*. These nuances are more than curiosities, for they guide people's temporal outlooks and numerical sense (Gordon 2004).

**Nouns:** Many languages construct nouns on the basis of biological gender. In Spanish, for example, the *moon* is feminine (*la luna*), while in German it is masculine (*der Mond*). Moreover, in French, all weekdays are masculine, while in Russian, Monday, Tuesday, and Thursday are masculine and Wednesday, Friday, and Saturday are feminine (Sunday is neutral, in case you are curious). Yet for speakers of Dyirbal, another Australian aboriginal tongue, nouns are only partially based on biological sex. While one set of nouns is used when denoting men and most other animate entities, another class denotes women, some animals, fire, water, and violence-related entities, thus inspiring the linguist George Lakoff's (1987) famous book title, *Women, Fire, and Dangerous Things*.

### A Language-Opinion Connection?

We can look at examples closer to home. Consider, again, nuances in grammatical gender. Whereas English, a Germanic tongue, obliges speakers to distinguish between *he* and *she*, speakers of Romance languages—e.g., French, Italian, Portuguese, Spanish, and others—are additionally required to designate the gender of *all* nouns, making Romance languages even more gendered than English. Then there's a language like Russian, which obliges its speakers to do what speakers of English and Romance tongues already do

grammatically, but also requires inflecting verbs for gender in the past tense. In contrast, speakers of Estonian, Finnish, Hindi, Hungarian, Indonesian, Turkish, and Vietnamese make use of absolutely no grammatical gender markers at all. They are, in a word, genderless.

The use of tenses isn't any more consistent. While English uses a future tense form to talk about tomorrow (e.g., "it will rain"), Finnish lacks grammatical means of marking the future and, consequently, Finnish speakers talk about future using present tense (Dahl and Velupillai 2011). Temporal metaphors vary as well. In English, we think about time in terms of distance: "it was a long night," "they have had a long friendship," "another long meeting!" The Greek language, however, construes time in a manner akin to a quantity. Thus, a Greek speaker would say "it was a big night," "they have had a big friendship," and "oh no, another meeting that lasts much!" (see Casasanto et al. 2004).

Languages also differ in the extent to which they use active versus passive voice. English speakers use an active voice when describing events and are taught in school to prefer it. Hence, an English speaker will use transitive sentences, such as *Jeremy spilled the coffee*, even when this act was unintentional. Yet Japanese and Spanish speakers prefer not to mention the agent when describing accidents and would instead say that *the coffee got spilled*. Minor differences? Yes. Trivial consequences? No. Alas, how we remember events and assign causality can affect high-stakes outcomes, like descriptions of eyewitness accounts (Fausey and Boroditsky 2011).

Clearly, then, considerable diversity exists between languages and what they grammatically oblige their speakers to do. This is interesting for two political scientists like us because language is a valuable currency in politics. In mass publics throughout the globe, citizens draw on their own words to debate, deliberate, and ultimately choose what they believe is in their best interest. Indeed, people use language to voice support for or opposition to various policies ranging from the mundane issues of, say, local trash collection, to the more central issues of inequality, poverty, conflict, environmental sustainability, and more. These opinions, expressed through language, can have far-reaching consequences when they influence whether we increase or decrease equality, advance or hinder development, prepare for or ignore the future, or even start or end wars. And we know that many times, public opinion systematically affects the course of politics (Stimson 1999, 2004; Stimson, Mackuen, and Erikson 1995). Does this mean that language is a fundamental force behind mass opinion, influencing the shape of political attitudes, beliefs, and outlooks expressed by individuals?

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You would think this is the case. If the language we speak can affect whether we construe events as accidents or foul play (Fausey and Boroditsky 2011), then it seems plausible it can also affect how people interpret corruption, fraud, or poor government performance—and even influence whether individuals are willing to hold public officials to account for these outcomes (Healy and Lenz 2014; Huber, Hill, and Lenz 2012; Lenz 2012; Malhotra and Kuo 2008). Moreover, if language influences whether we perceive the future as being very different from today (Chen 2013), then it stands to reason that language can shape public support for future-oriented policies, such as environmental protection or social security reforms (Shaw and Mysiewicz 2004; Winter 2006; Yeager et al. 2011). Indeed, inasmuch as language affects whether we express prejudice (Danziger and Ward 2010), it might also play a role in (de)escalating intergroup conflict (Horowitz 1985; Kinder and Dale-Riddle 2012; Tesler and Sears 2010). Similarly, insofar as language impacts whether we pay attention to gender distinctions (Boroditsky et al. 2003; Flaherty 2001), it might also shape our understanding of gender equality and acceptance of nonbinary individuals. Finally, if language can impact our moral reasoning (Keysar, Hayakawa, and An 2012), it may shape our understanding of what is right and wrong in politics and policy, as well as how willing we are to compromise on our beliefs (Haidt 2012; Ryan 2017, 2019).

Each of these examples drives home an intuitive point: that it is highly plausible for language to shape political opinions. And what we have provided above is just a short list of language effects with possible political consequences. The ways in which linguistic differences might matter for politics are numerous. After all, language is the lifeblood of politics. Political scientists, therefore, should not turn a blind eye to the role that language might play in shaping political thinking and choices. Furthermore, if the language we speak can shape how we construct reality, then exploring how linguistic differences might shape mass political choices could push forward research in various subfields. For example, better understanding how language shapes thought can advance research in political psychology by broadening our understandings of attitude formation and change. In addition, greater knowledge of language effects on people's attitudes, behavior, and preferences can shed new light on cross-country variation in policy choices and outcomes, relations between ethnic groups, international interactions, and many other phenomena.

Our goal with this book is to start mapping the effects of language on politically relevant attitudes by building a comprehensive framework that

explains *whether, why, and how* language affects mass opinion across several domains. We are not the first to display this curiosity. Political scientists, like the eminent David Laitin, have previously examined the link between language and politics (Laitin 1977). But the primary focus of prior research has been the macro-level causes and consequences of language choice and policies (cf. Laitin 1992, 1998; Laitin and Ramachandran 2016; Liu 2015; Liu and Pizzi 2018), rather than how structural differences between tongues impact individual decision-making. Indeed, very few studies that we are aware of have examined the independent effects that language might have on political outcomes at the individual level (Laitin 1977). And, when this focus exists, many times the goal of scholars has been to treat language as an indicator of another variable of interest, such as ethnic differences or diversity, not linguistic differences per se (e.g., Chandra 2012; Ferree 2012; Horowitz 1985). For instance, prior research has studied language use to better understand ethnicity and ethnic relations (Adida et al. 2016; Garcia Bedolla 2005; Laitin 1998; Laitin, Moortgat, and Robinson 2012) or explored how language skills and exposure to foreign languages impact attitudes toward immigrant integration (Hopkins 2014, 2015; Hopkins, Tran, and Williamson 2014; Sobolewska, Galandini, and Lessard-Phillips 2017). These are all important studies that inform our own work. But ultimately, they are not what we are really interested in—namely, the linkages between the language that people speak and the political views they express. The goal of this book is to begin mapping these effects of language on politically relevant attitudes.

How hard can this really be, right? If linguists and cognitive scientists have accumulated evidence of language effects on human thought, then it seems a simple matter to just graft these basic insights onto the study of political opinion. Yet, as many political scientists know, the realm of politics is a peculiar one, where many of the qualities that research on language effects takes for granted—heightened attentiveness, strong engagement, and considerable effort—are relatively weak, if not entirely absent among individuals (Delli Carpini and Keeter 1996; Lodge and Taber 2013; Pérez 2016a; Zaller 1992). Hence, explaining how language impacts political thinking demands a theoretical leap not yet taken, one connecting *thinking for speaking* to the cognitive and affective processes underlying individual opinions (Tourangeau, Rips, and Rasinski 2000). As we will argue in the chapters to come, language influences public opinion, not by determining what people think about or by providing access to a distinct political reality



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(cf. Sapir 1958; Whorf 1940). Instead, language systematically aids in the interpretation of politics and the expression of political opinions.

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But even if questions about theory are answered, another clarion call beckons: how to establish, empirically, that language impacts public opinion? Again, there is more than meets the eye when looking at previous work in linguistics and cognitive science. There is, for example, no getting around the fact that prior work has done an impressive job of establishing that language can cause shifts in people's thinking in several domains, including individual judgments of space, time, and objects (see Boroditsky 2001 and Pérez 2015 for overviews).

But there is also no getting around two other facts, which are inextricably tied to each other—and which matter immensely for political science and other data-driven disciplines. The first is that, notwithstanding the breathtaking range of domains in which researchers have uncovered language effects, the one that is most important to us—public opinion—is the one that is glaringly missing from this accumulated inventory. Only one study that we are aware of has directly assessed whether differences between languages can causally influence what individuals opine about *politics* (Laitin 1977).

The second uncomfortable fact is that, while evidence about the generic causal connection between language and human cognition is strong, evidence of this pattern's breadth throughout the world is surprisingly weak. Prior work has mostly unearthed language effects in carefully controlled lab settings, with small samples of convenience, a limited range of language treatments, and a lack of outcomes that directly speak to politics—hardly the kind of stuff that will convince other social scientists that language influences mass opinion. This tradeoff between internal and external validity (Campbell and Stanley 1963)—between pinning down the causal effect of language and establishing its robustness—is a real one in political science, where evidence that generalizes to the rough-and-tumble world of politics has greater appeal. The advantage, as we see it, is that in convincing political scientists about the merits of language effects, we also extend and fortify what language researchers have already done before us. To move these boulders forward, then, a more convincing set of research designs is needed to make the case that language shapes mass opinion.

## Toward a Theory of Language-Opinion Effects

With a now clearer sense of the theoretical and empirical stakes involved, let us turn here toward a basic sketch of our theoretical argument, which we develop in greater depth in chapter 1. We use this framework to evaluate language-opinion effects in several political domains, including mass opinion toward gender equality, environmental policy, ethnic relations, and candidate evaluation. This approach—of studying language effects *across* multiple domains—lets us test several observable implications of our argument, allows us to isolate varied circumstances under which language-opinion effects wax and wane, and enables us to distinguish language effects from the impact of people's cultures. In these ways, we chart new territory in our understanding and appraisal of language effects, thus helping to advance language effects research in both theoretical and methodological terms.

Our framework rests on two major pillars. The first is supplied to us by Dan Slobin, a famed linguist who birthed the notion of *thinking for speaking* (Slobin 1996, 2000). The gist of Slobin's simple but powerful idea is that languages vary in the degree to which they grammatically force their speakers to attend to and encode certain aspects of their environments (Boroditsky 2001; Fuhrman et al. 2011; Ogunnaike, Dunham, and Banaji 2010; Slobin 1996, 2003). Think, for example, about basic grammatical differences between languages, such as the nuances between a gendered and genderless tongue. If one wishes to say *the sun* in Spanish (a gendered language), one would need to say *el sol*, with the definite article *el* denoting that the sun is masculine in that tongue. Yet a genderless language like Estonian would not require a speaker to distinguish the sun as male or female—in fact, as we explained before, even the word for *he* and *she* is the same in this tongue. Thinking for speaking is therefore qualitatively different for Spanish and Estonian speakers.

This implies that different language speakers can be biased toward focusing on those aspects of the world that their tongue demands. If speaking a language requires one to make certain distinctions between objects, such as colors, gender, and time orderings, then speakers take for granted that these categories actually exist in the world and are relevant to a judgment, task, or opinion (cf. Boroditsky 2001; Boroditsky et al. 2003; Cubelli et al. 2011; Fuhrman et al. 2011; Vigliocco et al. 2005). Thus, language can structure thought by making some distinctions more salient (Cubelli et al. 2011; Hunt and Agnoli 1991) and certain mental associations and categories more accessible than others (Danziger and Ward 2010; Ogunnaike et al. 2010).

Our second pillar, *belief-sampling*, comes to us from John Zaller, Roger Tourangeau, Milton Lodge, Charles Taber, Norbert Schwarz, and other social scientists invested in understanding how, exactly, people form and express their opinions about politics. In particular, the work of these individuals and their colleagues teaches us that the average citizen approaches public affairs with low levels of attention, information, and effort (Lodge and Taber 2013; Pérez 2016a; Schacter 1999; Simon 1985; Zaller 1992). Instead of having ready-made opinions on all matters, people construct opinions based on considerations that are salient when a topic is broached (Lodge and Taber 2013; Schwarz 2007; Tourangeau et al. 2000; Zaller 1992)—considerations that may have been made more salient by the features of the language that they speak.

Merging *thinking for speaking* with *belief-sampling* yields our *language-opinion hypothesis*. This is the falsifiable notion that language affects most aspects of opinion formation and expression in a measurable way: from how people utilize information, to what considerations they retrieve from memory, to how these considerations inform one's opinions. Running through this claim is a basic process. Language makes some mental content more *accessible* in people's minds (see Pérez 2015 for a review). That is, the language one speaks makes some associations, beliefs, knowledge, and values more prominent in people's memory, thus heightening their accessibility. This is what nudges opinions in predictable directions.

Our argument is versatile in more ways than one. It can explain *whether* grammatical features of a language will impact the political opinions people express. It can also explain *how* language shapes political opinions, focusing on the influence of language on the learning and recall of relevant information for opinion formation. It is also able to anticipate *when* language will matter for mass opinion, and just as important, when it will not. Finally, our framework can clarify *why* language can affect mass opinion across a diverse set of seemingly unrelated political domains that include gender and LGBTQ equality, environmental policy, ethnic relations, and candidate evaluation and choice.

For example, as we have already explained, languages vary in the degree to which they grammatically oblige speakers to attend to and encode gender as part of their everyday experience. Our language-opinion hypothesis suggests that speaking a genderless language should promote greater perceived equity between men and women. By neglecting to formally distinguish between male and female objects and individuals, speakers of

these languages are not as sensitized to pay attention to gender, including traditional gender roles and categories. With gender not as mentally salient, speakers of genderless tongues should express more gender-blind attitudes, both in terms of gender equality and acceptance of nonbinary individuals.

Similarly, languages across the world vary by whether they require speakers to attend to and encode time. *Futured* tongues, like French, oblige speakers to use specific verbs to differentiate between temporal tenses, which alerts speakers that the future is distinct and distant from the present. In contrast, *futureless* tongues, like Finnish, do not oblige speakers to grammatically distinguish between these tenses, making tomorrow seem temporally closer and more similar to today. Drawing on our language-opinion hypothesis, we would expect that speakers of futureless languages will treat pending rewards as less distant and more pressing than speakers of *futured* tongues, leading them to support efforts and practice behaviors that are more present-oriented.

Beyond grammar and lexicon, language can affect political opinions because it plays a role in the encoding and recall of political information—a crucial aspect of the opinion-formation process. For example, in many nations throughout the world, the language of an ethnic majority coexists—sometimes peacefully, but often in tension—with the language of a minority. Our language-opinion hypothesis predicts that majority and minority languages will prime different considerations in memory, thus directly impacting what individuals attend to when thinking about politics. Here, a minority language should draw speakers' attention to the presence of ethnic divisions in society, given the status of that tongue in society. When speaking a minority language, people are therefore more likely to notice and prioritize ethnic divisions when expressing political opinions. That nudge is absent when speaking the majority language in the same society.

Yet in other instances, speakers of a minority tongue may develop slightly different sets of ideological associations and beliefs simply because their languages expose them to varied sources of information and, as a result, greater access to specific content in memory. In the United States, for example, Latino individuals might have mental access to different types of information depending on the language (English or Spanish) they use when they learn and retrieve this content. Hence, who people are and what they believe about politics might depend, in some measure, on the language they use to navigate the political world and form opinions about it.

## **Toward a Methodological Assessment of Language-Opinion Effects**

Our primary method for drawing reliable inferences is experimentation. Most of our empirical studies rely on experiments with bilinguals who live in the same cultural context. In these experiments, we randomly assign the language in which respondents express their political opinions. This simple, yet powerful, design allows us to effectively hold constant all other (un)observed differences between bilinguals besides language and clearly identify any linguistic effects. This is worth stressing. We do not simply compare groups of individuals who speak different languages—*we randomly assign the language* in order to identify its effect on opinions.

We conduct our experiments in large and heterogeneous samples of bilingual adults in nations like the United States, Sweden, and Estonia. This diversity of national contexts allows us to exploit several naturally occurring linguistic features (e.g., the grammatical nuances between a futured and futureless tongue or the availability of pronouns to denote people as masculine, feminine, or in a nonbinary way) that shed new light on the language-opinion connection. That is, we did not pick these countries at random or out of convenience, but focused on them because they provided the language contexts that best allowed us to identify the various language effects. For example, Sweden is the only country in the world that has formally adopted a gender-neutral pronoun, permitting us to design realistic experiments where we randomize gendered versus genderless pronoun use. Similarly, Estonia is a relatively unique context where a sizeable bilingual population speaks languages that differ on multiple relevant dimensions, including whether they are gendered, futured, or have a minority status. Randomizing language assignment in this context allows us to identify the effect of grammatical and nongrammatical features of a language on various outcomes of interest. We discuss the advantages as well as potential limitations offered by these research sites in greater detail in the respective chapters.

We then pair these experiments, whenever possible, with systematic analyses of cross-national survey data to more fully and convincingly show that language shapes public opinion toward gender equality, LGBTQ tolerance, environmental conservation, ethnic conflict, and political candidates *beyond the immediate context of many of the experiments we conducted*. In this way, our research strategy significantly enhances the external validity of language effects research (Kinder 2011; McDermott 2011), which to date

has largely been confined to small-scale lab experiments, often with convenience samples of undergraduate students.

Methodologically, we also illuminate how language effects on public opinion manifest themselves—that is, we address the question of mechanisms (Baron and Kenny 1986; Elster 1989). Prior research on language effects has mainly focused on establishing that language causes shifts in people’s thinking. Scholars have spent less time, however, on isolating the precise mechanisms through which this influence occurs: the *how* and the *when*. To this end, we craft a series of experiments that lead to four types of innovation in terms of mechanisms.

First, our experiments demonstrate that language effects are generated not only by the grammatical quirks that certain tongues make salient—such as the obligatory gendering of objects—or the precise words employed by language speakers in everyday situations, but also by priming certain politically relevant associations. While the grammatical and lexical effects have been part of prior work on language effects, the priming effects we report have not. Yet from the point of view of attitude formation and change (e.g., Taber and Young 2013; Valentino and Nardis 2013), or even from the point of view of multilingual survey research (e.g., Pérez 2009, 2011), understanding such priming effects is crucial to grasping language’s influence on mass opinion, since so many patterns in what people think about politics are generated, often mechanically, via priming (Lodge and Taber 2013; Tourangeau et al. 2000; Zaller 1992; Zaller and Feldman 1992).

Second, some of our experiments specifically pinpoint how language shapes opinions via *thinking for speaking*. To this end, our experiments uncover the powerful influence of language in making certain mental associations and categories more cognitively accessible, which allows individuals to draw on them to form and express their opinions about politics more easily. This evidence allows us to document, in a clearer way than before, a fuller chain of causation from linguistic features to mental salience and accessibility of certain associations to expression of attitudes reflecting those associations. In this way, our experiments expose the “black box” of language effects to new light, helping to clarify with added precision how the tongue one speaks impacts the attitudes and outlooks about politics that one reports.

Third, we have designed some of our experiments to explore when language effects weaken or dissipate. This allows us to establish that the influence of language on mass opinion is variable and can be minimized by information that people have at their disposal. Specifically, we establish the influence of social norms, i.e., a clear sense that certain opinions are

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(de)valued by others in the mass public, in attenuating language effects. Establishing when language does and does not matter in relation to other stimuli offers significant theoretical advancement over existing work, which has single-mindedly focused on establishing language effects. It also has significant practical relevance—a constant concern for political scientists—because it offers directions on how to overcome language effects that may be socially deleterious.

Finally, our methodological approach wrestles, systematically and profoundly, with one of the more persistent bugbears in research on language and thinking: the role of culture. Prior work has been frustratingly unable to fully distinguish the effect of language from that of culture. We do this in chapter 3 by taking advantage of three unique experiments with adults who share the same cultural milieu, speak the same language, but who use different words to express political views. And, as our data permit, in other chapters we control statistically for specific manifestations of culture, including national and ethnic identities, ideological worldviews, and specific value dispositions. Combined, this collection of methodological interventions provides robust and consistent evidence that language—independently of innumerable other forces—systematically nudges public opinion in meaningful directions.

### A Look Ahead

The path from idea, to theory, to research design, and data analysis is a long and winding one, with several obstacles to surmount along the way. We therefore start our journey in chapter 1 by engaging a smoldering debate around what is known as the Sapir-Whorf hypothesis: the broad notion that differences between tongues *determine* how humans interpret their world. Critics have quashed this hypothesis as unfalsifiable, noting that it is stated so broadly that it is impossible to know when it is wrong. Moreover, empirical support for this hypothesis has rested more on scintillating anecdotes, rather than hard scientific evidence proper. These two features alone would have done in any hypothesis. But we will learn that, instead of burying this idea, a cadre of linguists that includes Dan Slobin, Lera Boroditsky, and others has refashioned this claim into a more constructive conversation about *when*, *why*, and *how* language can, generically, shape human cognition. We will therefore spend some time familiarizing ourselves with the basic cognitive principles of language effects laid out by these researchers, while also interrogating the evidence supporting these tenets.

Based on these efforts, we then formulate our own theoretical argument to explain language effects on mass opinion throughout the globe—and across diverse political domains that include gender equality, environmental policy, ethnic relations, and candidate evaluation. This new framework creates synergy between two heretofore isolated mechanisms. The first of these is *thinking for speaking*—the idea that languages vary in their grammatical organization, which obliges speakers to focus on certain aspects of their world (Slobin 1996, 2000). The second mechanism is *belief-sampling*—the notion that instead of having ready-made opinions on all matters, people construct opinions based on considerations that are salient when a topic is broached (Lodge and Taber 2013; Tourangeau et al. 2000; Zaller 1992). Blending these components into a unique alloy yields our *language-opinion hypothesis*: the falsifiable claim that language shapes opinion formation and expression by making some mental content more accessible, which nudges opinions in predictable directions. Together, this framework and general hypothesis guide our empirical hunt for language effects on public opinion in the chapters that follow.

Having clarified our theoretical stakes, chapter 2 begins a steady campaign to empirically appraise our language-opinion hypothesis. To this end, we focus on the realm of gender inequality, exploring whether the presence (absence) of grammatical gender affects how people think about gender equality. We draw on a trio of studies to accomplish this goal. The first of these is a large-scale survey experiment in Estonia, where we randomly assigned bilingual adults to complete their interview in Russian (a language that uses grammatical gender) or Estonian (a language that does not use grammatical gender at all). We find evidence that strongly aligns with our language-opinion hypothesis. That is, in comparison to individuals who interview in Russian, those who interview in Estonian express more liberalized attitudes toward gender and gender relations, including weaker stereotypical views about women and greater support for females in visible and meaningful political roles and offices. We then show, using rich cross-national survey data and sophisticated statistical modeling techniques, that this empirical regularity is not a narrow function of Estonian-Russian bilinguals or the national setting in which they find themselves. Indeed, across a variety of mass publics throughout the world, individuals who report speaking a genderless tongue at home express similarly liberalized attitudes toward the increased presence of women in society, the economy, and politics. We then cement these results with a second experiment that replicates our core finding, while also illuminating when language effects weaken. Specifically, we



show that language effects on mass opinion about gender relations dissipate when individuals can avail themselves of clear information about public (un)popularity of measures tackling gender disparities.

In chapter 3, we continue our assessment of language effects by solving a nagging challenge that even linguists have had a hard time addressing: namely, the extent to which language effects are driven by structural differences between tongues, rather than cultural differences between individuals. Imagine, for example, asking a Spanish speaker and an English speaker their opinions about traditional gender roles and finding that the former individual expresses more conservative views than the latter. Does this pattern emerge because Spanish is a more gendered tongue than English—or because Spanish speakers inhabit a paternalistic culture characterized by machismo?

To gain leverage over these points, we travel to Sweden to study its citizenry's use of gender-neutral pronouns and how this might affect their views about gender equality and LGBTQ rights. In 2015, Sweden adopted the use of a new gender-neutral pronoun, *hen*. This means that as part of their grammatical toolkit, Swedes now seamlessly use *hen* alongside the explicitly gendered *hon* (she) and *han* (he). We have here, then, a nation that introduces a new pronoun, where people—all sharing a single national culture—rehearse this pronoun in their everyday lives. What do we find?

Three major patterns. First, we discover that the words that people use—in this case, pronouns—matter in terms of nudging people's views about gender and LGBTQ equality in a liberalizing direction. Second, these language effects operate through a mechanism that puts our language-opinion hypothesis into even sharper relief. Specifically, we demonstrate that gender-neutral pronouns decrease the mental salience of males, which then has the downstream effect of liberalizing people's views about gender and LGBTQ equality. Last, since all participants inhabit the same cultural milieu but vary in terms of their pronoun use, we can say more definitively than before that these effects are due to linguistic nuances, rather than cultural effects in disguise.

Chapter 4 broadens our empirical scope by delving into the question of language effects on people's construal of time. Similar to grammatical gender, languages throughout the world vary in the degree to which they require speakers to attend to and encode temporal nuances. For example, some languages make use of a separate future tense (we call these *futured* languages), while others use present tense to talk about the future (i.e., *futureless* tongues). We seize this grammatical feature to assess whether language systematically impacts mass opinion about future-oriented policies.

Accordingly, we undertake two new studies, each yielding more evidence in favor of our language-opinion hypothesis. The first of these is another original experiment where we manipulate interview language in a public opinion survey of bilingual adults who speak a futureless (Russian) and futureless (Estonian) tongue. Among other tantalizing results, we find that individuals who express their opinions in a futureless tongue are significantly more supportive of imposing a “green” gasoline tax in order to help protect the environment. In other words, the nature of the language that people interview in nudges them to make political choices that address long-term policy goals. We then avail ourselves one more time of rich cross-national data to show that this basic empirical regularity exists more widely across mass publics beyond the one in which we undertook our experiment.

Up to this point, our empirical chapters focus on the role grammatical features of tongues play in shaping public opinion. Chapters 5 and 6 shift gears by grappling with some of the ways in which language subtly, but indelibly, leaves its stamp on the attitudes, beliefs, and outlooks that people report when asked about their views. In particular, we zero in on the interplay between language and priming. In the study of public opinion, priming is a workhorse mechanism whereby mental content is made more accessible through features that are extraneous to the domain about which one’s views are measured. This includes the wording and order of questions, the response options that items offer, the presence or absence of interviewers—and, as we aim to demonstrate—the language that one interviews in.

To begin establishing this point, chapter 5 examines whether the simple act of interviewing in a minority versus majority language can heighten the mental salience of ethnic diversity and divisions. In other words, does the language that people interview in impact how much they notice and take into account ethnic divisions when expressing political opinions? Drawing on our theoretical framework, we reason that interviewing in a minority language should prime ethnic divisions, leading people to take these divisions into account when judging politics. We test this claim with two survey experiments that assign people to interview in either a minority (Russian) or majority (Estonian) language. Consistent with this priming-via-language mechanism, we discover that people who are assigned to report opinions in a minority language rank ethnic relations as a more important political issue and are more likely to correctly identify anti-minority actors in politics. Language, we find, makes ethnic diversity more mentally accessible, which leads people to directly integrate this consideration into their views about politics. Building on this unique finding, we then show, in a now familiar fashion,

that the empirical regularity captured by this experimental result emerges in nations beyond the one where we undertook our experiment, suggesting that the degree to which people notice and approve of ethnic diversity in society depends on whether or not they interview in a minority language.

Chapter 6 then considers whether language shapes opinions through linguistic *tags*, i.e., the way information is stored and organized in memory. Working in a US context, where civic affairs are overwhelmingly conducted and enshrined in English—the majority language—we argue that information in this domain is stored and organized (i.e., *tagged*) in English, even if some new information in this domain is learned in a different language, such as Spanish. To show this, we undertake two original experiments with Latino bilingual adults. This pair of studies is unique in that they assign bilinguals to *learn* new political information (about a political candidate) and *report* their political judgments in one or both of their tongues. As a result, we can observe individuals who learn new political information in English and express a political opinion also in English, as well as individuals who learn the same new information in Spanish but report a judgment in English. This unique design allows us to show that language affects the encoding and retrieval of political information. That is, language directs people to integrate new political information (e.g., details about a candidate) with other related considerations (i.e., other political information) they have already learned in English. We also show that language affects how this information is recalled and affects opinions: interviewing in a majority tongue (English) as opposed to a minority language (Spanish), both facilitates recall of this new information and facilitates making connections to other political information, which are *tagged* in English in memory. Language, it appears, also shapes how political information is learned and retrieved.

In our concluding chapter, we review these findings, taking special care to tease out and discuss their implications for the study of political attitudes. In particular, we discuss how a better understanding of the language-opinion connection deepens our grasp of political decision-making in mass publics. We also delve into the various insights that our findings provide for some major political science questions of our time.

But first, let us start with the basics by turning to chapter 1 and learning about the promise and pitfalls of studying language effects from the perspective of linguists.

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