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Lying: an anthropological approach

A thesis submitted in partial satisfaction

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in Anthropology

by

Alejandro Suleman Erut

2021

ABSTRACT OF THE DISSERTATION

Lying: an anthropological approach

by

Alejandro Suleman Erut

Doctor of Philosophy in Anthropology

University of California, Los Angeles, 2021

Professor H. Clark Barrett, Chair

While philosophers have largely discussed the concept of lying from a conceptual analytical approach, less research has been focused on the empirical basis of those ideas. This dissertation explores the concept of lying from a multidisciplinary and cross-cultural perspective. In the first chapter I look at the concept of lying in Shuar-Achuar small scale communities from the Pastaza basin in Ecuador. This chapter shows how the concept is instantiated in the pragmatic-semantic interface and is shaped by normative and ontological cultural particularities. The second chapter addresses the concept of lying as a conceptual prototype in eleven languages. This project shows both commonalities and differences across linguistic and cultural communities. Finally, chapter three examines the use of the concepts of truth and lying in the context of conflict resolution and the decision-making process in a Shuar-Achuar community.

The dissertation of Alejandro Erut is approved.

Alessandro Duranti

Joseph Manson

Josh Armstrong

H. Clark Barrett, Committee Chair

University of California, Los Angeles

2021

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Acknowledgment

I would like to express my gratitude and acknowledgment to those that made this dissertation possible. I would like to remark that far from what the academy seems to assert by asking individuals to sign a corpus of research as the apex of their Ph.D. requirements, this research endeavor would have not happened with the subjects that participated in the studies (including some that turned friends), committee members and professors that gave the advice during the process, classmates, visiting scholars, university employees, family, friends, funding agencies, and to tens of collaborators.

To all of you, I want to say thanks!

Vita

Alejandro Erut got his "Licenciatura en Composición Musical" form Catholic University of Argentina in 2007, and his "Licenciatura en Antropología Social" from the University of Buenos Aires in 2015. In 2017 he got his M.A. in Anthropology from University of California, Los Angeles.

His interest in the discipline includes the use of mixed methods, and his focus is the study of conceptual systems across societies by blending methods and theories taken from experimental philosophy, developmental psychology, cognitive anthropology, ethnography, and cognitive sciences in general.

He did fieldwork with Wichí people from the South American Gran Chaco and more recently with Shuar and Achuar communities of the western Amazon.

Alejandro is a research member of the Geography of Philosophy Project (John Templeton Foundation grant, PIs: Stephen Stitch, Edouard Machery, and H. Clark Barrett) and a grantee of Culture of Schooling (Templeton Research Trust grant, PI: Cristine Legare).

He was awarded the Robert Edgerton Graduate Endowment Grant, Culture of Schooling grant, and Dissertation year Fellowship, among others.

Finally, his interest in social affairs is expressed as a founder member of the Diversity, Equity, and Inclusion Group, which addresses the role of under-represented groups in the research process.

INTRODUCTION

1. PROLEGOMENON

In some way, writing a dissertation is like trying to cross a swampy terrain. Every time you try to take a step forward, the mud drags you to the bottom. I started this journey of aiming to understand the concept of lying from an anthropological perspective, partially because I felt that, as part of that subset of intuitions that people use to classify situations of transmission of information, lying was going to allow me to address human cognition from multiple perspectives. But I was also animated by the context in which lying, deception, and other related concepts were becoming visible in the political and media agenda in the US; after all, this became my new place of residence. So, while I was a prisoner of the contingency of that historical moment, as soon as I decided to do my first steps in one direction, I discovered that I was not the first and that there was much more to dig under the surface before moving forward.

I found, for instance, that the focus on the epistemic use of information for political reasons was largely debated in ancient Greece. But in a way that is the opposite of the modern US media perspective on the issue. Socrates, Plato, and some pre-Socratics thought about the capacity for lying as a valid and even desirable characteristic of a political leader (Mielczarski, 2018). Later I discovered that Lebanese men, use a similar strategy to show their intellectual superiority toward other men (Gilsenan, 2016). This means, in other words, that the acceptability of lying seemed not to be the same everywhere through time and societies.

I also had my findings during the research process. By trying to explore in depth how lying is attributed in Shuar-Achuar communities, I found a complex relationship between pragmatics and

ontological commitments about the cognoscibility of the future. By doing large-scale cross-cultural research I found, that for instance, in Japanese or Korean there is no lexically simple way of distinguishing between saying something that is a lie (without, e.g., knowing it) and lying. However, the same research experience showed me that intentions are quite important to judge that someone is lying in a wide range of cultural and linguistic communities. Finally, I was able to learn how people use lies in a strategic way in order to find consensus through testimony. Therefore, little by little, step after step, the swamp made some room for firmer ground and made the journey worthwhile.

1.1. Lying by election

When I moved to the US in 2015, I was not particularly concerned about the study of lying. My original plan was to study the concept of ethnicity and then ontological relativity. However, at the same time I went to the field in Ecuador, my advisor, H.C. Barrett, invited me to join him in a pilot study about the concept of lying in *Chicham* speaking communities (Shuar-Achuar). Right after returning from Ecuador, between October and November of 2016, I left my flat at UCLA University Housing to live with two sisters who were following very closely the presidential elections that brought Donald Trump to presidency. It was in this context when I discovered that notion of truth and its counterparts were becoming more and more central in the media.

During the period in with Donald Trump was in office, terms like "lying", "bullshit", "false", "fake news", "hoax" among others, became more and more central not just in the USA, but in other countries as well: in Latin America, for instance, the term "fake news" became widespread during this period as an anglicism. The end of Trump's presidency was not the exception, since the Covid-19 pandemic put into question the credibility and trust of previously unquestioned sources of

knowledge. Additionally, information (false or true) was compartmentalized into categories that were politically and ideologically loaded. The apex of this period was probably the factionalism that denied - for months - the legitimacy of the election in which President Trump was defeated.

When the conjuncture in which my PhD studies unfolded is described in this way, it might sound as though my interest in the topic was simply opportunistic. However, that was not the case. One of the things that struck me the most from the attention that "lying" and "truth" attracted in the media during the last few years was that it was just another in a long series of episodes in which the discourse about falsity gained centrality in the US. After reading a large amount of the literature on lying –the vast majority produced in English, by English speakers - I was able to recognize the impact that the ambiguous testimony of Bill Clinton during his impeachment had in the US society as well as the narratives that underly many state documents (see, for instance, Arendt (1972)). Thus, the question that grew in my work was whether the concept of lying that I experienced in the US had the same epistemic connotation in other societies. Does any other social group think that lying should be moralized in the same way? Is there anything universal in the concept?

1.2. Dark truth

On the Christmas Eve of 2019 I was walking with my eight-year-old niece Morena downhill on one of the streets of S.C. Bariloche, the Argentinian city at the north of Patagonia where I was born and where I grew up. We were going from the house that I rented for the holidays to the house of one of my sisters to have a celebration with the entire family after two years without having the chance to be reunited. Actually, it was the first time in which Morena was going to be able to have a Christmas Eve with all her cousins, aunts, uncles, and her grandmother. During this short trip I became curious to know if Morena already knew that Santa was not real. So, as adults usually do,

I mentioned that probably Santa brought a lot of presents to my sister's house. But Morena immediately told me that she knew that Santa was not real. I acted like I was surprised and asked when and how did she come to know that. Her answer was "last year I went to my friend's house and, maliciously, she told me that Santa was not real". What struck me the most was not that she already knew that Santa was a fictional / mythic character, but that she used the word "*maliciosamente*" (maliciously) to refer to the fact that someone was actually telling her the truth. So, I asked her why she thought that her friend has been "malicious". To what she replied, "because she ruined my innocence".

There are at least two things that emerged from this short story that are relevant here. The first one, is that we, humans, develop epistemic content socially, and this content, true or false, plays a special role in our lives. In Morena's story about Santa, she seemed to be concerned about the *benefit of believing something false*, instead of knowing something true which was much more mundane than the one that describes an old and generous chubby guy that sneaks into people's houses to leave beautiful presents. On the other hand, this example shows that Morena was fully aware that people can use epistemic information to harm others (see Krauss (2017) for a discussion on epistemic harm). And what is most interesting about this case, was not that the moral weight was on the side of the lie, since it was "a good lie", but on the epistemic information that brought the truth.

2. WHY STUDY LYING?

The cases described above show some of the reasons why it seems relevant to study the concept of lying from an anthropological perspective. On the one hand, "lying by election" suggests that there is a concern about monitoring epistemic information has broad consequences that extend to

multiple components of the social body. The first question that might arise is if this scrutiny is "purely" culturally motivated or if it is also the result of evolved mechanisms. Also, it raises the question if this interest in lying, deception, and other conceptual family members shows the same strength across cultures. For instance, a relevant question is if and how the social admissibility of lying varies across cultures and contexts. On the other hand, Case 2 shows that epistemic information can be moralized. And by epistemic, I mean also truth, and the intentions that motivate the epistemic act of communication. In this sense, lying seems a very easy target, since it is easy to envision cases in which preventing someone from access to the truth might create a case of epistemic exploitation, oppression, or simply disadvantage (Dotson, 2011, 2014; Fricker, 2007; Krauss, 2017; Sperber et al., 2010). But it also possible to think about situations in which preventing someone from accessing the truth might save them from a life-threatening situation or prevent them from suffering. In the next three sections I will discuss a) philosophical approaches to lying; b) cross-cultural studies on lying; and 3) studies that address its moral dimension.

3. WHAT IS LYING?

3.1. Philosophical approaches

Philosophers have long been interested in the phenomenon of lying. Authors like Mielczarski (2018) showed that lying was a common topic of discussion among Ancient Greek philosophers. The author states that lying, as a way to preserve the common good, especially by rulers, was considered by early sophists (e.g., Protagoras), Socrates, and Plato as the right thing to do (*righteous-lie*). On the other hand, philosophers like Aristotle endorsed a more deontological position by considering that telling untruth should be always considered wrong and reprehensible.

But besides the moral role of lying in politics, Greek philosophers established a method of studying concepts that was predominant until recently. This method, usually referred as conceptual analysis, consist in exploring a concept by presenting arguments in favor of scenarios that elicit the concept. The assumption is that conceptual evocation is the result of an intuition that is triggered by necessary and sufficient conditions that the philosopher is able to formalize in a series of statements. Even when this method was applied by Saint Augustine and Kant to defend their moral stances toward lying, it was not until the mid-twentieth century that philosophers vigorously started to look for a formal definition of lying.

To show a brief summary of where philosophers arrived in terms of lying and its extension, let's see what now is considered a [or the] *classic definition* of lying (Mahon, 2016)

Classic definition

- CD1. A speaker S states (or asserts) that p to a listener H (statement condition)

- CD2. A believes (or knows) that p is false (belief condition)

- CD3. In fact, p is false (fact condition)

- CD4. S states that p to H in order to deceive H (deception condition)

Condition CD1 was not subject to many controversies besides small differences by which people might conceive of the notion of assertion (e.g., if it entails belief or knowledge (J. Turri, 2016a)). But in general philosophers agree that the content of the statement or the assertion is linguistic more than extralinguistic - as it is the case for the concept of deception (Mahon, 2007). For instance, if John packs a suitcase with clothes during a fight with his partner in order to make her think that he is leaving, although he knows that he will not, it would not be considered a lie but an instance of deception.

The second condition generated more disagreement between authors. While some philosophers would argue that believing or knowing by the speaker that the content of the statement is false is a necessary condition for lying, others, like Saint Augustine, argue that it is possible to lie by telling or asserting something that that is believed to be true if the intention is deceiving the addressee (see Mielczarski (2018, p. 158)). However, this position is not frequently addressed by later philosophers, the majority of whom agree that the belief condition is a necessary feature of the concept (Fallis, 2009).

CD3 is even more polemic in recent debates. Some authors considered that as long as the belief condition is in place the result of the epistemic correspondence between the truth-value of the statement and the facts is not relevant – especially if the intention to deceive the addressee is clear (Turri & Turri, 2015).

The final condition (CD4) is probably the most interesting from the point of view of conceptual analysis. This condition was originally included to tease apart those cases in which the speaker says something false but is not trying to deceive the addressee. Clear examples are acting or joking, but also linguistic artifacts like metaphors and ironies. But not everyone agrees about the advantages of including this condition since it seems to keep outside the conceptual boundaries cases that might widely be considered a lie. Some of the counterexamples include *bald-face lies* (Carson, 2006; Sorensen, 2007)*, knowledge lies* (Sorensen, 2010)*,* and lying by breaking pragmatic rules (Fallis, 2012).

In the last two decades philosophers started to question the efficacy of conceptual analysis as a method of inquiry. They found that by this methodology philosophers hardly arrived at a consensus and that they were applying a theory of concepts whose psychological validity was extensively questioned, that is: assuming that concepts are definitions with necessary and sufficient features

(Knobe & Nichols, 2008). Instead, there is extensive evidence that many concepts adjust to cases as a matter of degree in which some properties are more critical than others, and in which some instances of the concept are more salient than others (Laurence & Margolis, 1999; Machery, 2009). An example of this is the prototype theory of concepts, which shows why "cow" and not "bat" is elicited faster and more frequently by subjects when they are asked to make a list of mammals (Rosch & Mervis, 1975). Other alternatives to definitional approaches of concepts are theory-theory and conceptual nativism (Gopnik & Wellman, 1994; Laurence & Margolis, 2002). Besides the problem of lack of consensus and psychological reality of the type of definitions that conceptual analysis usually uses, there is the problem of the type of population that this practice tends to sample. Strictly speaking the only sample, in conceptual analysis, is philosophers themselves (Sytsma & Livengood, 2015). So experimental philosophers changed the angle in this regard, and they decided to elicit folk-intuitions (instead of expert-intuitions) from lay people. More recently, in enterprises like *The Geography of Philosophy Project* experimental philosophy has been explored at a new level by studying folk-intuitions in a wide range of linguistic and cultural communities (Kiper et al. in press). In chapter 2, which reports research that is part of *The Geography of Philosophy Project,* I will address some more the details of experimental philosophy as a research program when it comes to study lying. In the next section I will discuss the antecedents of cross-cultural studies on lying outside experimental philosophy.

3.2. Cross-cultural studies on lying

One of the questions that is relevant to the study of epistemic concepts is if they show universal properties (Craig, 1999; Hannon, 2019; Sperber et al., 2010). But anthropology also showed that societies build their system of knowledge in interaction with their ecologies and historical

trajectories (Bloch, 2012). Therefore, one can expect to find conceptual variability in the way epistemic concepts are culturally and locally instantiated (Duranti, 1999). one of best methods that human research has at hand to address this distinction is the cross-cultural approach.

What are the antecedents of cross-cultural studies on lying? To answer this question, I would like to divide the approaches in two groups. On the one hand are ethnographic or qualitative approaches. On the other hand, there are experimental studies. I will present examples of both in this dissertation: while chapter 3 adopts an ethnographic approach, chapter 2 is purely experimental, and chapter 1 mixes ethnographic knowledge with experiments.

The ethnographic approach has the advantage of showing how subjects use the concept of lying (or even how they lie) by placing emphasis on the interactions that the researcher observes, and the meaning that subjects attribute to these interactions while responding to the researcher's questions. Moreover, the ethnographic approach is useful to capture how institutions shape subjects' values, attitudes, and behaviors.

Some examples of ethnographic approaches are the developmental studies of Brown (2002) in Tzeltal and Rumsey (2013) in Papua New Guinea, where the authors showed the use of lying as a way to shape children's behavior. Blum's (2005) work in contemporary China exposed the role of lying in the context of interaction between business employees and clients. And the work of Griffiths (2012) gives good examples of how the UK Border Agency shapes beliefs about the attribution of lying regarding asylum-seekers, by treating them as "liars" or non-trustable individuals.

Regarding experimental approaches, it is worth mentioning the study of Danziger (2010) with Mopan Mayan and US participants, which shows a special case of conceptual instantiation in Mopan Maya, in which the speaker's intentions are not considered as a constitutive feature

considering falsity as the main component. Following a conceptual prototype paradigm, Hardin (2010) studied the concept of lying in Ecuadorian Spanish speakers, Cole (1997) with Makkan Arabic speakers, and Adha (2020) with Bahasa Indonesia speakers. Finally, Chen et al. (2013), compared the use of the concept between Chinese and US participants, showing a difference in the acceptability of lying between the two societies.

These studies show that there are both common points and differences in the way people use the concept of lying, and that these differences can be found in the way the same concept is used (as in Danziger's works), or on contextual aspects of the ethics of lying (as in Chen et al. (2013)). Chapter 2 of this dissertation will implement a large-scale comparison that shows in detail how some of the properties are instantiated across cultural and linguistic communities.

3.3. The moral dimension of lying and the value of truth

The two examples that I commented at the beginning illustrate some of the problems that the study of lying faces from the moral perspective. Case 1, for instance, shows that there is a particular relationship between politics and lying that is long enough that can be traced to the presocratic (Arendt, 1972; Derrida, 2002; Mielczarski, 2018). This brings some moral questions. For instance, what is a stake in that context is if epistemic exploitation is allowed? And if it is, in which circumstances?

Those that considered that lying is always wrong, like Saint Augustine and Kant, represent the deontological perspective. And as Isenberg (1964) clarified, taking a deontological stance on lying implies the belief that there is something intrinsic and undetachable in the act of lying that makes it wrong under any circumstances. However, deontologists have had serious issues in identifying

what this intrinsic wrong is, especially when they have to face instances in which lying could save, for instance, someone's life.

But besides the philosophical approach that scholars might take, it seems that different societies have a different threshold for the acceptability and tolerance of lying behaviors (Nishimura, 2019). I already mentioned the case of the Ancient Greece, but also Lebanese men use lying as a way to impose their rhetoric power over others (Gilsenan, 2016), and Chen et al.(2013) found empirical evidence that showed that Chinese subjects were less strict about the moralization of lying than US ones. But not everything is black or white between societies. Sometimes, the same society might condemn the act of lying in one context (e.g., as perjury) and encourage the same act in other (e.g., an FBI interrogation) (Green, 2019). These cultural and contextual (e.g., pragmatic) differences make the study of how epistemic exchanges are moralized more challenging.

4. BRIEF DISSERTATION OVERVIEW

4.1. Norms and ontologies

In chapter 1 titled *Lying about the future: Shuar-Achuar epistemic norms and the opacity of predictions*, I explore a special case of the concept of lying that is instantiated in Shuar-Achuar communities of the Pastaza basin in the Amazonian Ecuador. By studying the conceptual attributions of lying, speaker's beliefs, and speaker's intention, I show that Shuar-Achuar subjects, but not participants from another 13 countries, make attributions based on the speech act in which the speaker frames the assertion. The results suggest that for Shuar-Achuar participants, predictions that turn out to be false are classified as instances of lying, while this is not true for excused commitments. I explain these findings with the proposal that Shuar-Achuar people have

a particular ontological commitment about how the future is conceived (and maybe accessible). Additionally, the pragmatic component of the findings is analyzed as a normative stance about *what is and what is not acceptable to say about the future*. This chapter was written as a manuscript for publication with H. Clark Barrett and Kristopher Smith.

4.2. Universals

In the search for universals, in Chapter 2 titled *Intentions, falsehoods, and beliefs "as lies": a study in eleven languages,* I use the structure of *The Geography of Philosophy Project* to study how falsehood, beliefs, and intentions interact as constituents of lying as a conceptual prototype in eleven languages, across cultural and religious contexts. The results show that across sites intentions are more important than beliefs, and that the factual truth value of information takes precedence over the epistemic status of the speaker's beliefs when people attribute lying. Additionally, this chapter explores how lying is moralized, and how it can be empirically disentangled from similar constructs (e.g., insincerity). This chapter was written as a manuscript for publication with collaborators from the Geography of Philosophy Project.

4.3. Testimony

In *Evidence from testimony: a case of conflict resolution in Western Amazonia*, which constitutes the third and last chapter of the present dissertation, I discuss the role of testimony as a way of negotiating the truth in the context of a "trial" that took place in one of my visits to a Shuar-Achuar village in 2019. In this work, I analyze how "social truths" and "strategic lies" interact with the subject's epistemic beliefs and intentions in the context of institutionalized social interactions. After the death of a baby by the "accidental" ingestion of "*barbasco*" (a poisonous plant-extract that is used to catch fish), a community member was accused of being responsible for the tragic death as the result of the (negligent or intentional) use of shamanic practices and other criminal

actions. In this setting, a complex plot of gossiping, alliances, and confrontations between community members created a series of hostile disputes in which each community member played a strategic role in establishing a social truth. After analyzing the transcription, translation, and analysis of the "trial", as well as performing individual interviews with the participants, I explore how subjects use testimony as well strategically to restore the social equilibrium in the community.

CHAPTER 1

LYING ABOUT THE FUTURE:

SHUAR-ACHUAR EPISTEMIC NORMS AND THE OPACITY OF PREDICTIONS[1]

1. INTRODUCTION

1.1. What is a lie?

What is a lie? While this question is hotly debated by philosophers (Carson, 2006, 2008; Castelfranchi & Poggi, 1994; Fallis, 2009, 2010, 2012; Mahon, 2008, 2016; Marsili, 2014; Sorensen, 2007, 2010; Stokke, 2013b, 2013a; Vincent & Castelfranchi, 1981), for many readers the answer may be fairly simple: in order to lie, one must have the intention to deceive or mislead (i.e., deceptionism) (Mahon, 2016). Lying, for many of us, implies a certain kind of intention, and one cannot lie "by mistake". Saying something one believes to be true, for example, cannot typically be the basis of a lie, except perhaps in very special cases involving ambiguity or other kinds of playing with the truth (Carson, 2006; Fallis, 2009; Meibauer, 2005; Vincent & Castelfranchi, 1981).

And yet, empirically, it seems to be the case that people can disagree over whether a particular assertion or speech act is a lie. This disagreement can take at least two forms. The most mundane and typical form is disagreement about the specific facts of a case—for example, about what a given individual knows, or intends. This can occur even when all parties agree about what "lying" means. For example, we can disagree about whether or not a particular politician was lying, if one of us thinks he believed what he was saying and the other doesn't.

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[1] This chapter is based on a manuscript written with H. Clark Barrett and Kristopher Smith.

A second form of disagreement might occur, however, if we disagreed about what *counts* as lying—if we applied a different concept of what it means to lie. For example, linguist Eve Danziger claims that for Mopan Maya speakers, unintentionally saying something false can count as a lie (Danziger, 2010). In this community, mistakenly stating that today is Tuesday when in fact it is Wednesday would be considered lying, even if the speaker believed it was Tuesday and had no intention to deceive anyone. In this case, unlike the one above, an English speaker and a Mopan Maya speaker could agree about the facts of the case—what the speaker knew and believed—and yet disagree about whether the speaker lied (Danziger, 2010).

Intuitively, the latter kind of disagreement—disagreement over the very nature of what it means to lie—seems likely to be much rarer than the first, where people simply disagree about the facts. And yet if Danziger is right, then multiple, distinct *concepts* of lying exist in different parts of the world and in different speech communities. To many of us, this might come as a surprise. While we certainly expect some conceptual variation across cultures and languages, especially in locally idiosyncratic concepts such as types of food or clothing, the notion of a lie might seem to many like a fundamental part of our basic conceptual toolkit, rooted in assumptions about communicative intent (See also Adha, 2020; Brown, 2002; Chen et al., 2013; Cole, 1997; Funiko, 2019; Gilsenan, 2016; Hardin, 2010; Sweetser, 1987).

As anthropologists, however, this kind of variation does not strike us as implausible. Speech communities seem to vary in how lying is treated: how frequently it is discussed, how often accusations of lying are entertained, and how serious such accusations are. During two decades of field research in Shuar communities in Ecuador, one of us (HCB) noticed that discussions of lying by community members seemed to differ in frequency and context from what he typically observed among circles of friends and colleagues in the U.S. If true, what might account for this difference?

Could the criteria for something to count as a lie differ, as suggested by Danziger for Mopan Maya communities?

This question prompted us to conduct a study of what Shuar-Achuar community members judge to be a lie, which revealed differences from our own intuitions and, as it turned out, those of people in many other language communities as well. We conducted a series of follow-up studies attempting to isolate which of several factors might account for this difference. We report the results of these investigations below. First, however, we will briefly review some of the theoretical questions surrounding this study of the concept of lying, and how they relate to larger questions about the nature of human cognition and language.

1.2. Language, concepts, and norms

Why do people have the concepts they do, and what are these concepts used for? There is no single answer to these questions, but there are a variety of approaches to concepts and language that see them as fundamentally intertwined. In the broadest sense, functionalist approaches to concepts focus on the functional roles they play in language and in thought. This kind of functional role is alluded to in the title of J. L. Austin's classic book, *How to do things with words* (Austin & Sbisà, 1975). To accuse someone of "lying" or to consider a particular utterance a "lie," on this view, is to do something functional: for example, to adopt a moral stance with respect to an agent or an act, or to categorize a statement or proposition in a particular way (e.g., as false, and perhaps intentionally so). Functionalism, in this sense, does not commit one to a particular function; the functions of concepts can and presumably will vary, and some or perhaps all concepts may have different functional roles depending on the contexts in which they are used. For example, the function of the concept *lie* could be social, epistemic, or both. It could play one functional role

when used in speech, and another in private thought. And, importantly, functionalism allows for a variety of *origins* of concepts. Some, for example, hold that concepts can be innate in origin, and / or have evolutionary roots (Carey, 2009; Fodor, 1998; Laurence & Margolis, 2002); others, that they are entirely culturally and historically derived (Prinz, 2002, 2012); and still others that they emerge through an interplay of cultural and linguistic transmission with evolved, universal features of human cognition (our own view, (Barrett, 2015a, 2015b; Boyer, 1994; Sperber, 1996).

Lying is a concept which, at first glance, seems to have both moral and epistemic functions. By "moral function" we mean that accusing someone of a lie typically (though perhaps not always) carries moral valence (Bok, 1978; Green, 2019). Lying is usually considered morally bad, though also sometimes good, as in the case of white lies (Erat & Gneezy, 2011; Gilsenan, 2016). Accusations of lying are also, themselves, typically moral acts. Whether and how lying and accusations of lying are moralized depends, of course, on the moral point of view of who is judging; they may be Kantian, consequentialist, etc. (Green, 2006; Isenberg, 1964; Mahon, 2006; Mielczarski, 2018; Wheeler, 2007).

Here we largely (but not entirely) leave aside the moral function of the concept *lie.* Instead, we focus on its possible epistemic functions: that is, the role that judgments of lying play in a kind of epistemic economy of information, where the truth value of information is assessed in terms of factors such as its source and plausibility. Such evaluations are sometimes considered under the rubric of *epistemic vigilance,* in which receivers of information, especially from social sources, are vigilant to the possibility of accepting something as false that is in fact true, or vice-versa (Sperber et al., 2010). In this framework, categorizing something as a lie might serve to mark both the truth value of the information (as false, or dubious) and to mark certain qualities of the person stating it (as a liar, untrustworthy, malicious, etc.). This relates to moral theory when it comes to

conceiving of interactions based on norms (e.g., Kantian ethics) or in values that are tied to the qualities of the person that is being judged (e.g., Aristotelian ethics).

Under such an epistemic vigilance framework it is easy to imagine a universalist account of the concept of lying. Under such an account, everyone everywhere would have the same concept *lie*, and it would serve both to mark information as false and to mark the conveyer of that information as intentionally deceptive. But if the concept of lying varies across speaker or speech communities, as Danziger suggests, then what does this mean for the epistemic vigilance account, and conceptual functionalism more broadly?

The answer, we suggest, is that the functions of concepts can be modulated by, and / or interface with, cultural and linguistic norms about how those concepts are used (see also Hardin, 2010). In the case of the concept of lying, this normative modulation concerns how the concept functions within an epistemic worldview that sees some kinds of information as inherently unknowable. Within such a worldview, assertions about such unknowable kinds of information should not be made intentionally by upstanding epistemic agents. They are, in other words, lies. This is so even though such assertions might not be considered lies for members of a community with different epistemic attitudes about the kinds of facts being asserted. This is the possibility that we will explore, and provide evidence for, here.

1.3. The Shuar-Achuar cultural setting

Our study focuses on norms about lying in Shuar and Achuar communities in eastern Ecuador. Shuar and Achuar are closely related languages in the Chicham language group (*chicham* meaning language, or speech, in both languages). The communities where we conducted our research are composed of small, close-knit villages, typically of a few hundred people or less, in which most

community members know each other and are related through descent or marriage. As in many such communities, the dynamics of interpersonal relationships are complex, and a tremendous amount of personal reputation centers on speech, and particularly, public speech (Juncosa, 2005). The art of public speaking is highly valued, and much personal reputation rides on the quality of what one says, both in terms of the truth value of what one says, and how and when one chooses to say it (Juncosa, 2005). As in most small communities where information is transmitted verbally from person to person, people gain reputations as reliable or unreliable sources of information based on whether time proves them right or wrong (see also Duranti, 1994).

In addition, the Shuar / Achuar worldview tends to see the world as full of uncertainty and highly opaque to ordinary persons. Much emphasis is placed on the possibility of appearances to deceive; animals, people, and things may not be who they appear to be. The future is regarded as highly uncertain and typically unknowable. There are, however, exceptions: specially trained people– *uwishin*, or shamans—are capable of seeing the future under the influence of the herbal hallucinogen *natém.* And even untrained people can catch glimpses of the future, either through the ingestion of herbal hallucinogens such as *natém* and *maikúa,* or when dreaming—and Shuar-Achuar communities have a complex traditional system of dream interpretation. Typically, knowledge about the future, when obtained through these means, is meant to be kept secret, at risk of possibly altering events (M. F. Brown, 1984; M. F. Brown & Van Bolt, 1980; Descola, 1996, 2014; Harner, 1984; Mader, 1999; Rubenstein, 2012).

This view of the future, and our epistemic access to it, differs from that of many non-Shuar-Achuar people: it suggests that the future *can* be known, in some circumstances, but starkly contrasts with the ordinary case, in which the future is opaque, unknowable. Against this backdrop, speech acts about aspects of the world that are remote or difficult to know are viewed with some suspicion, a

feature that has been noted in some other Amazonian societies (Everett, 2008). In our own work in Shuar-Achuar communities, we have noted that people can be reluctant to make confident statements about hypothetical scenarios, even when invited to do so, possibly reflecting a form of epistemic caution in speech acts; statements about things like seeing people in the distant future must be qualified with, e.g., "*si Dios quiere*" (if God wills it). This contrasts with the view held by many in the U.S., for example, who would hold statements about the future to always be probabilistic, and rarely if ever reflecting claims of absolute certainty on the part of the speaker.

As we pondered the relationship between concepts of knowledge and the concept of lying, we read Eve Danziger's work on Mopan Maya speakers with great interest (Danziger, 2010). She found, using stories or vignettes about characters making speech acts, that Mopan Maya speakers used the local word for "lying"—*tus*—to refer to cases involving a false utterance that the speaker believes to be true. A comparison sample of U.S. participants, on the other hand, unanimously judged these cases as *not* lies—because the U.S. concept requires that the speaker believe that what they are saying is false in order to lie. These findings struck us, because we suspected that Shuar-Achuar people sometimes called things "lies" (Spanish: *mentira)* for which we would not have used the same term. We decided to investigate how Shuar and Achuar speakers extend the concept of lying, using Danziger's method of vignettes. We began by replicating her exact scenario from the Mopan Maya study, but also added multiple other scenarios to get a sense of how the words "mentir" and "mentira," in Spanish, are used by bilingual Spanish / Chicham speakers (we carried out our work in Spanish, because that is our preferred language for communicating, but we will show that "mentir" is used differently by Shuar-Achuar people than non-Shuar-Achuar

Ecuadorians, or anyone else we surveyed).[2] We found differences from our own intuitive use of the concept right away, and proceeded to develop and administer a series of vignettes to home in on exactly where the Shuar-Achuar use of the term differed from our own, as well as samples of participants given the same vignettes in multiple different languages around the world.

2. MATERIALS AND METHODS

The method that we used to probe peoples' intuitions about lying was the method of vignettes, as used by Danziger (2010), and commonly used in experimental philosophy to examine the boundaries of concepts and how they are extended to particular situations (e.g., Arico & Fallis, 2013; Knobe, 2003; Machery et al., 2017; Turri & Turri, 2015). In all of the studies reported here, we used vignettes that described a hypothetical situation in which a protagonist made a statement that might or might not be considered a lie, and asked participants to give their judgments about whether or not the person lied (a yes / no response, along with, in some cases, additional questions). Crucially, the method of vignettes allowed us to use a factorial design, in which some aspects of vignette scenarios could be held constant while varying others, typically across subjects. Figure 1.1 gives examples of vignettes used in the study. To analyze the results, we used factor-based Bayesian models (GLMMs) with logistic link functions to model the effects of varying factors in the vignettes on the probability of participants judging an instance to be a case of lying (1) or not (0), as well as other factors such as nationality / culture, age, sex, etc.

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[2] It is worth mentioning that Shuar-Achuar epistemic lexicon has the following terms: *nekas* = true, *nekasta* = not-true (false), *weit* = lie, *weitruatin* = lying / to lie, and *anankartin* = deceiving / to deceive.

Our primary research sites were Shuar and Achuar communities along the north bank of the Pastaza River in Pastaza Province, Ecuador, and Shuar communities in the Palora region of Morona Santiago Province (see Supplementary Materials for more details). In addition, for some of the studies below, we compared Shuar / Achuar participants' responses on particular vignettes with those of participants from other countries, recruited online and given translated versions of the same vignettes.

Our investigation proceeded in stages following a modified form of the hypothetico-deductive method. We began with the ethnographic hunch, described above, that Shuar / Achuar people might use the concept of lying in a culturally particular way, even when speaking Spanish. We probed this with an initial set of vignettes, which provided initial support for this hunch, but left open other questions. We proceeded with a series of vignette studies, altering factors in the vignettes to rule out a series of possibilities for what might account for the culturally particular use of the concept of lying by Shuar / Achuar participants. In the following, we organize our studies as a series of questions, each of which we answered using this vignette technique, gradually homing in on the culturally particular nature of lying attributions in Shuar / Achuar communities.

Question 1: Is there a culturally particular Shuar-Achuar concept of lying?

When we started studying the concept of lying in Shuar-Achuar communities, we had no more than a vague hunch that the concept they employ could be somewhat different than ours (AE and HCB) - but this was just an intuition. Eve Danziger's work with Mopan Maya speakers, in which she concluded that the Mopan Maya concept of lying is different than the English one in being non-intentional (LYING$_{non\text{-}intentional}$), suggested that it might be possible to find some non-universal properties in the concept. This resonated with our intuition that the Shuar-Achuar concept of lying

might differ in some way from the notion that we, as English and Spanish native speakers, have. We did not sense that the Shuar / Achuar concept was radically different than ours, because most cases in which lying was discussed were perfectly intelligible to us, and clearly involved the statement of falsehoods. But it seemed to us there were cases where people called something a lie that we would not have—as in Danziger's case. To explore this, our starting point was designing a pilot study with a wide range of cases in which a speaker S produces a statement p (statement condition), that turns to be false (truth condition). We left open, however, the possibility of finding, like Danziger, a case in which the intention to deceive was not a necessary condition (intention-to-deceive condition).

To achieve an initial approximation to the Shuar-Achuar concept of lying, one of us (HCB) designed a pilot study that included an adaptation of Danziger's scenario, and a series of cases based more on an ethnographic intuition than in a systematic hypothesis-based approach. Eight vignettes were developed to explore a wide range of circumstances in which a speaker produces an assertion that turns out to be false (see Table 1.1, and Supplementary Materials (SM), appendix 1, for full text). Figure 1.1 shows two examples of the initial set of scenarios and questions.

The first data collection was performed between the summers of 2015 and 2016. A total 67 subjects from Shuar and Achuar communities in Pastaza Province, Ecuador, were recruited for the pilot study (see SM). Participants were given eight scenarios in which a protagonist makes a statement that turns out to be false, and that varied in several ways. They included, for example, a "failed commitment" (FC(s-i+e-))[3] scenario in which the speaker makes a commitment that he does not keep for external reasons, and an "incorrect medical diagnosis" (IMD(s+i-e+)) scenario in which

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[3] False Commitment in which the severity of the outcome is not severe (s-), made by an ingroup member (i+) that is not an expert (e-).

a Doctor's diagnosis turns out to be incorrect (see Table 1.2 for the list of scenarios, and SM for

full texts). As Table 1.2 and Figure 1.2 show, there was variation across scenarios in participants'

attribution of lies, and variation in degree of consensus among participants across the scenarios.

Baseline Stories	Source Manipulation
Failed Commitment **FC(s-i+e-)** "A Shuar man, Carl, lived in a town that was close to a river. He was invited to a meeting that was going to take place on the other side of the river. Carl said: "Yes, I will be present in the meeting". But the night before the meeting, it rained a lot, and the level of the river was too high. Thus, Carl was not present in the meeting and what he said did not come up as the truth". What do you think, did Carl lie?	**Failed Commitment Accurate Source** **FC(s-i+e-a)** "A man, Carl, lived in a town in a rural area that was close to a river. When the level of the river was low it could be crossed on foot, but sometimes after strong rains the river became impassable. Carl was invited to a meeting that was going to take place on the other side of the river. Before he accepted, Carl consulted some of the fishermen who knew the river very well, because he knew sometimes the river became impassable due to heavy rains. The fishermen said that during that season the water level was always low, and the river almost never became impassible. So, Carl decided to accept the invitation and he said: "Yes, I will be present at the meeting". However, the night before the meeting, contrary to what the fishermen had said, it rained a lot. The day of the meeting, the water level of the river was too high for Carl to cross". Thus, he was not present in the meeting. **What do you think: did Carl lie?** **What do you think: did Carl believe he was going to be at the meeting?** **What do you think: did Carl want to be at the meeting?** **What do you think: did Carl intend to tell the truth?**

Incorrect Medical Diagnosis IMD(s+i-e+)	Incorrect Medical Diagnosis Inaccurate Source IMD(s+i-e+i)
"Dr. Mendoza was a doctor that was working in a hospital. One day, a man and his wife came to him bringing their daughter that was sick. She had been ill for some weeks and was looking gravely ill. The Doctor did several tests and a thoughtful examination, and finally he said to the parents: "The illness that your daughter has is extremely serious. It seems that it is cancer, and it is not possible to perform a surgery. There is no way to cure her. It is true that she is going to die in six months". After hearing that, the parents went back home with their daughter. But after a year, the girl was still alive". What do you think, did the Doctor lie?"	"Dr. Mendoza was a doctor who worked at a hospital. One day, a man and his wife came to him with their daughter, who was very sick. She had been sick for some weeks and was looking gravely ill. The doctor examined the girl and did a series of tests. These tests were experimental and had a high degree of uncertainty, and sometimes failed to produce the correct result. In this case, the tests came out positive for a serious form of cancer. After seeing the results, Dr. Mendoza said to the parents: "The illness that your daughter has is extremely serious. It seems that it is cancer, and it is not possible to perform a surgery. There is no way to cure her. She is going to die within six months". After hearing that, the parents went back home with their daughter. They were very sad and made preparations for her passing. But after a year, the girl was still alive". What do you think: did Dr. Mendoza lie? What do you think: did Dr Mendoza believe the girl was going to die? What do you think: did Dr Mendoza want to help the girl and her family? What do you think: did Dr Mendoza intend to tell the truth?

Figure 1.1: Example of the two basic scenarios in which a speaker produces a statement that turns to be false. In the first case, Carl commits to be present at a meeting, although he ends not being present due to an external reason. In the second case, a Doctor generates a medical diagnosis that turns to be incorrect (false). On the right there are two variants of the basic scenarios in which type of source was manipulated.

What struck us most strongly was the difference in lying attribution between two types of scenarios: FC (failed promise / commitment) and IMD (incorrect medical diagnosis) (see Table 1.2 and Figure 1.2: FC(s-i+e-) and IMD(s+i-e+)). While our intuition suggested that neither of these scenarios represent a clear instance of lying, this was not the case for the participants. Most Shuar-Achuar speakers agreed with our intuition regarding FC(s-i+e-) but had a different intuition about IMD(s+i-e+): Shuar-Achuar participants said the Doctor was lying when he stated a diagnosis that turned to be wrong– as shown in Table 1.2; Median posterior estimate 0.300 [l-95% HDCI = 0.158, h-95% HDCI = 0.460] and 0.895 [l-95% HDCI = 0.797, h-95% HDCI = 0.965] respectively for FC(s-i+e-) and IMD(s+i-e+) scenarios (index 16 and 7).

LABEL	SCENARIO
FC(s-i+e-)	"A Shuar man, Carl, lived in a town that was close to a river. He was invited to a meeting that was going to take place on the other side of the river. Carl said: "Yes, I will be present in the meeting". But the night before the meeting, it rained a lot, and the level of the river was too high. Thus, Carl was not present in the meeting and what he said did not come up as the truth.
IMD(s+i-e+)	"Dr. Mendoza was a doctor that was working in a hospital. One day, a man and his wife came to him bringing their daughter that was sick. She had been ill for some weeks and was looking gravely ill. The Doctor did several tests and a thoughtful examination, and finally he said to the parents: "The illness that your daughter has is extremely serious. It seems that it is cancer, and it is not possible to perform a surgery. There is no way to cure her. It is true that she is going to die in six months". After hearing that, the parents went back home with their daughter. But after a year, the girl was still alive.
FC(s+i+e-)	Jorge was a Shuar man who lived in a rural area and had a truck with which he sold vegetables. Sometimes, people asked Jorge for help in transporting fruits or woods, or even to transport themselves to the city if they needed it. One day Jorge received a radio call from a Shuar family who lived deep inside the rainforest, just down the road. The family was composed by the couple and a girl. In the call, Jorge was asked to help to transport the girl to the hospital the next day because she felt very bad. Jorge said "yes" that he would be there the next day early in the morning to take the girl to the hospital. But at night there was a lot of wind and there was a storm that threw several trees on the route. Then the road was cut off and Jorge did not go to the family house to pick up the girl. Finally, the girl died near noon without ever having gone to the hospital.
IMD(s-i-e+)	There was a lady who took her son to the dentist Gonzalez's office because his tooth ached. Then the dentist, who was known as a very good professional, examined the child carefully: he explored the area of the molar, took an x-ray, and even did a blood test. After the examination, the dentist told the mother "the child has an infection in the tooth and must give him some pills for the pain and infection. Without the pills the pain will not calm down and it will get stronger. " Since the mother did not have the money to buy the medication, she decided to go home and return the next day to buy the pills; but in the morning, the child no longer had any pain and did not need to take the medication.
11) FC(s-i+e+a)	A man, Carl, lived in a town in a rural area that was close to a river. When the level of the river was low it could be crossed on foot, but sometimes after strong rains the river became impassable. Carl was invited to a meeting that was going to take place on the other side of the river. Before he accepted, Carl consulted some of the fishermen who knew the river very well, because he knew sometimes the river became impassable due to heavy rains. The fishermen said that during that season the water level was always low, and the river almost never became impassable. So, Carl decided to accept the invitation and he said: "Yes, I will be present at the meeting". However, the night before the meeting, contrary to what the fishermen had said, it rained a lot. The day of the meeting, the water level of the river was too high for Carl to cross. Thus, he was not present in the meeting.
IMD(s+i-e+i)	Dr. Mendoza was a doctor who worked at a hospital. One day, a man and his wife came to him with their daughter, who was very sick. She had been sick for some weeks and was looking gravely ill. The doctor examined the girl and did a series of tests. These tests were experimental and had a high degree of uncertainty, and sometimes failed to produce the correct result. In this case, the tests came out positive for a serious form of cancer. After seeing the results, Dr. Mendoza said to the parents: "The illness that your daughter has is extremely serious. It seems that it is cancer, and it is not possible to perform a surgery. There is no way to cure her. She is going to die within six months". After hearing that, the parents went back home with their daughter. They were very sad and made preparations for her passing. But after a year, the girl was still alive.
IMD(s+i-e+a)	Dr. Mendoza was a doctor who worked at a hospital. One day, a man and his wife came to

	him with their daughter, who was very sick. She had been sick for some weeks and was looking gravely ill. The doctor examined the girl and did a series of tests. These tests were extremely accurate and produced the correct result with a high degree of certainty. In this case, the tests came out positive for a serious form of cancer. After seeing the results, Dr. Mendoza said to the parents: "The illness that your daughter has is extremely serious. It seems that it is cancer, and it is not possible to perform a surgery. There is no way to cure her. She is going to die within six months". After hearing that, the parents went back home with their daughter. They were very sad and made preparations for her passing. But after a year, the girl was still alive.
IMD(s+i+e+)	"There was a Shuar couple that had a boy that was sick. So, they decided to bring the kid to a shaman that lived in a village down the river. This shaman was a very powerful man, and very benevolent. He was always helping people that was sick and didn't asked money for it. He did it always for free. When the shaman saw the kid, he said: 'The boy is very sick. I'm sorry, but there is nothing that I or anyone else can do. He will die in a week or two'. The couple went back to their house. But after a year, the boy was still alive".
FC(s-i-e-)	"A non-Shuar man, Ricardo, was invited to a party in a Shuar community located at the other side of the river. He said, "I will be there". However, the day of the party, the river overflowed, and Ricardo was not at the party".
FC(s-i-e+)	"Dr. Salcedo said by radio to the inhabitants of a Shuar community: 'I will arrive in the community to cure people on Tuesday morning.' However, on Tuesday it rained, and the route was closed, so Dr. did not reach the community."
FC(s+i-e+)	"Dr. Juarez received a call from a family that lived in a Shuar community inside the jungle. They called him because their daughter was sick. Dr. said, 'in two hours I will be there with the ambulance to bring the girl to the hospital and do her studies.' However, the wind gained strength and trees fell blocking the route. So Dr. did not go to look for the girl who died that same afternoon."
IP(s-i-e-)	"Dr. Gonzales was visiting a Shuar community at the home of José, a member of the community. While Dr. was visiting the family, José told Dr. that he had bought a truck a few months ago but that the day before it had broken. Then Dr. tells him that he knows about mechanics and that he wanted to see the truck. After inspecting the truck, Dr. says 'this truck is totally broken, it has no fix, and it doesn't work anymore. No one will be able to fix it'. However, a week later, a local mechanic came to the community and fixed the truck."
IMD(s+i+e-)	"There was a child in a Shuar community who was very sick. Then, Pedro, a neighbor of the community came to visit the house. The boy was lying next to the fire because he was cold. And although Pedro was not a doctor or a Shaman, nor did he know about the medicine he saw the child and told the boy's parents: 'this child is very sick, has cancer and will die within a week'. The parents became very sad, but after a year the child was still alive."
IMD(s-i+e-)	"Andrés, a member of a Shuar community was working with one of his children when his son fell silent from the roof of the house and hit his back. The boy complained a lot about the pain. Then Andrés told him 'you have to stay in bed and rest. Also, you have to take a pain pill. If you don't do that, the pain will be stronger and stronger. Since the boy did not like taking medicine or being in bed, he ignored his father and never took the pill or lay down to rest. However, the child's pain disappeared within an hour or two."
IP(rain)	"Jorge, a member of a Shuar community, said one day to some neighbors," I'm sure it's going to rain tomorrow. " However, the next day it didn't rain nor was there even any cloud in the sky."
IP(price)	"A politician tells the townspeople: 'the price of wood will be higher next year, and everyone will have more money.' However, the price of wood went down next year, and everyone earned less money than they expected."
IP(bridge)	"An engineer who was making a bridge near the community says: 'this bridge is strong enough for motorcycles, cars, and large trucks to pass. " However, the bridge fell after the first truck passed."

Table 1.1: Full scenarios and their codes. Please see SM for DVs.

INDEX	DESIGN	P	S	I	E	A	MEDIAN	LHDCI	HHDCI
1	IP(price)	+	-	-	+	/	0.969	0.906	0.998
2	IP(rain)	+	-	+	-	/	0.956	0.885	0.996
3	IMD(s+i+e-)	+	+	+	-	/	0.941	0.858	0.991
4	IP(bridge)	+	-	-	+	/	0.938	0.853	0.991
5	IMD(s+i+e+)	+	+	+	+	/	0.937	0.848	0.991
6	IMD(s+i-e+a)	+	+	-	+	a	0.901	0.768	0.987
7	IMD(s+i-e+)	+	+	-	+	/	0.895	0.797	0.965
8	IP(s-i-e-)	+	-	-	-	/	0.867	0.735	0.958
9	IMD(s+i-e+i)	+	+	-	+	i	0.843	0.675	0.957
10	IMD(s-i-e+)	+	-	-	+	/	0.827	0.652	0.953
11	IMD(s-i+e-)	+	-	+	-	/	0.645	0.447	0.821
12	FC(s-i-e-)	-	-	-	-	/	0.514	0.313	0.708
13	FC(s-i+e+a)	-	-	+	+	a	0.476	0.255	0.707
14	FC(s-i+e-i)	-	-	+	-	i	0.466	0.242	0.690
15	FC(s+i+e-)	-	+	+	-	/	0.441	0.216	0.672
16	FC(s-i+e-)	-	-	+	-	/	0.300	0.158	0.460
17	FC(s-i-e+)	-	-	-	+	/	0.237	0.098	0.407
18	FC(s+i-e+)	-	+	-	+	/	0.183	0.065	0.336

Table 1.1: P = Prediction (yes+, no-), S = Severity of the outcome (severe+, not severe -), I = ingroup member speaker (yes+, not-), E =Expert speaker (yes+, no-), A =Accuracy (a = Accurate, i = inaccurate, / =NA), Median posterior estimate and low and high 95% HDCI. Results refer to Shuar-Achuar samples (2015, 2016, 2017, 2018, 2019)

A closer look at the content of the two scenarios revealed several differences that might have influenced participants' judgments. For instance, both speakers (Carl and the Doctor) produced a statement that turned out to be false, but they differed in the valence of the outcome: while the consequence of the Doctor's speech act was that someone was going to die, Carl's utterance did not imply a bad outcome. Additionally, the quality of the source supprting the Doctor's the prognosis was not explicit in the scenario. Thus, we initially conjectured that participant's lying attributions were influenced by attitudes about the methods (sources) employed for diagnosis / decision making—for example, that people might find it impermissible to make confident

statements based on uncertain evidence. But as we proceeded into additional studies, new possibilities occurred to us.

The IMD(s+i-e+) case struck us because there was nothing in the scenario that indicated that the Doctor intended to deceive the family to which he was giving the diagnosis, and yet he was strongly thought by Shuar-Achuar participants to have lied. What followed was a series of studies intended to establish that this was indeed a recurrent and distinct pattern for Shuar-Achuar speakers, compared to participants from other languages, and to explore the logic underlying this culturally particular attribution of lying.
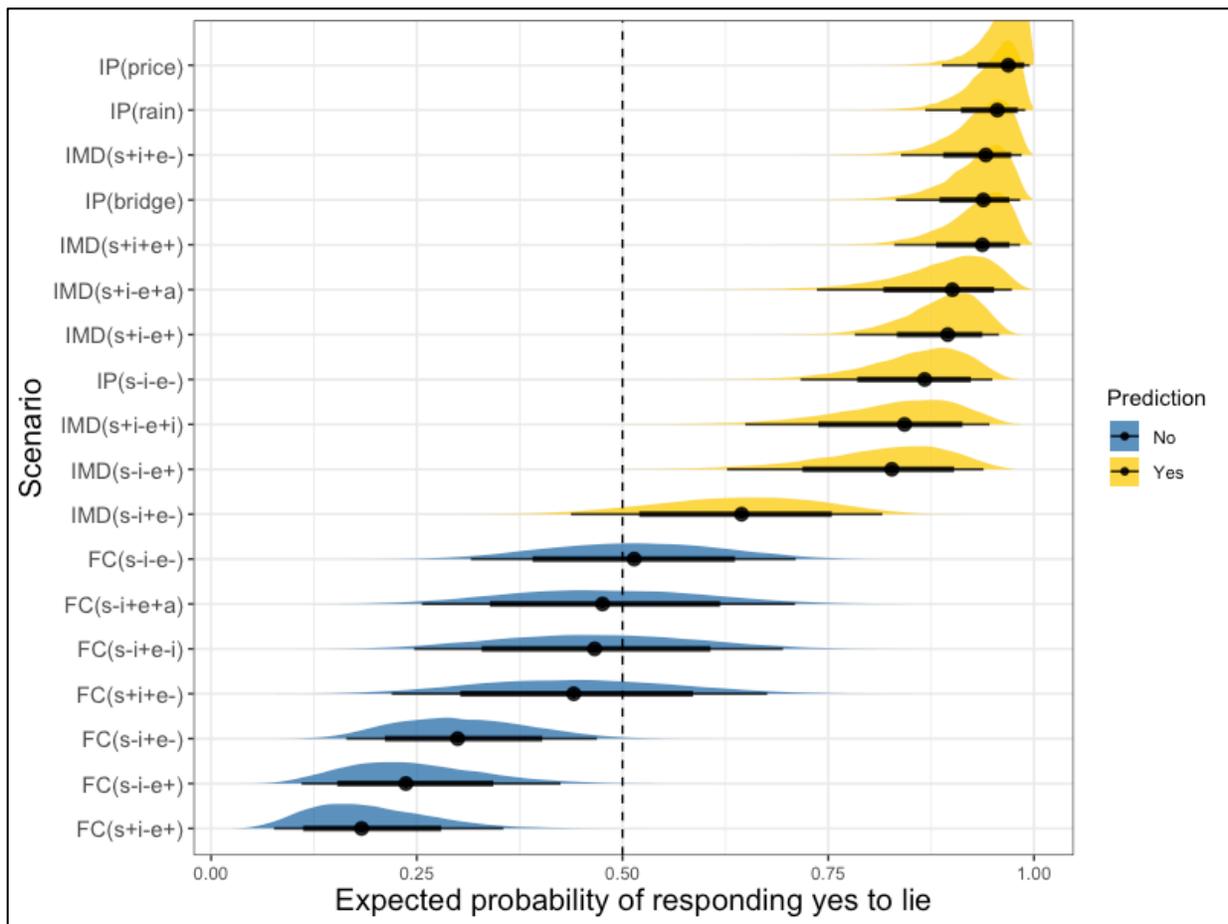
Figure 1.2: *Median (black dot) estimated probability of lying attribution by scenario; 75% (thick line) and 95% (thin line) HDCI (High Dimensional Conficence Interval) .*

Question 2: Does the pattern of lying attribution have to do with the source of information, and is it Shuar-Achuar specific?

After analyzing the results from the pilot, we decided to explore two possible sets of factors that might influence subjects' lying attributions in the FC(s-i+e-) and IMD(s+i-e+) scenarios. The first theoretical motivation of this study was to assess if the pattern that we found in Shuar-Achuar cultural communities could be extended or replicated to other cultural contexts: was it universal, or culturally specific? Our second theoretical motivation was to explore the hypothesis that the Shuar-Achuar pattern of lying attribution we observed depends on the quality of the source of information on which the assertion is based. For example, if the Doctor makes a confident diagnosis on the basis of a poor diagnostic test, perhaps this could be called a "lie."

To examine these questions, we created additional scenarios and gave them to participants in 14 populations, including a sample of non-Shuar-Achuar Ecuadorians. We modified the IMD(s+i-e+) scenario in such a way that the Doctor makes the wrong diagnosis based on a clinical test that varies, across different versions of the vignette, in its degree of accuracy: the test was either highly accurate ("the test was extremely accurate", scenario IMD(s+i-e+a), or not accurate ("the test fails sometimes"), scenario IMD(s+i-e+i)). In the same vein, we created two modifications that apply to the quality of the source in FC(s-i+e-) scenario. In one of the new variants Carl asks a group of fishermen, who might be considered experts, whether they think the river will flood, FC(s-i+e-a); in the other variant he asks his wife, who might not be considered to have any special knowledge regarding the river, FC(s-i+e-i). We recruited 1950 subjects from 13 populations, online, using Qualtrics Panels (see SM). Each participant was presented with the FC(s-i+e-) and IMD(s+i-e+) original stories and two variants (either accurate or inaccurate source). Additionally, we explored the effect of the accuracy of the source in Shuar-Achuar cultural communities, where a total of 48

participants were recruited in Pastaza Province during the summer of 2017. Subjects were presented with the same scenarios that were introduced in for international sample (IMD(s+i-e+a) or IMD(s+i-e+i); FC(s-i+e-a) or FC(s-i+e-i)) and two scenarios (IMD(s-i-e+) or FC(s+i+e-)) that will be discussed in the next section. The presentation order for scenarios was randomized (see SM for full list of DVs).

To analyze the data, we constructed a multilevel Bayesian logistic regression model with population and participants as random effects. Figure 1.3, Panel A shows posterior distributions from the model in the difference in log-odds of attributing a lie between the three FC and IMD scenario types by population (note that the Shuar-Achuar sample included the results from the pilot $N = 67$ for the original scenarios). Cases where the 95% HDCI (confidence interval from the posterior distribution) includes zero indicate no significant difference, at the $p < .05$ level, in probability of attributing a lie between the Doctor and Carl scenarios. The only case in which there was a significant difference was the Shuar-Achuar sample (in yellow) in which the 95% HDCI does not include zero, indicating a significant difference in the probability of attributing a lie across the two scenarios.

Figure 1.3, Panel B, shows posterior distributions from the model in the difference in log-odds of attributing a lie between accurate source and inaccurate source scenarios. Here, the 95% HDCI for the Shuar sample includes zero, indicating no significant effect of source accuracy on probability of attributing a lie. The only population which showed a significant effect of source accuracy was Hungary. See also Table 1.2 and Figure 1.2, for specific estimates of the Shuar-Achuar sample by scenario.
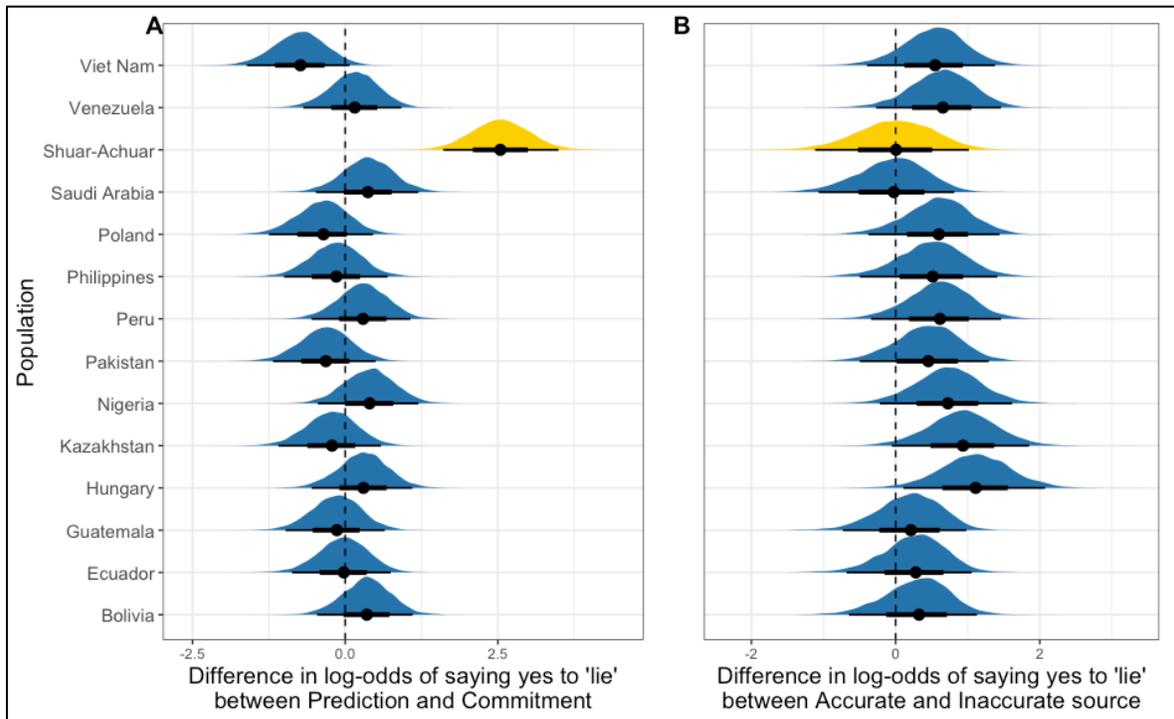
Figure 1.3: A) Difference in log-odds of saying yes between prediction and commitments by population. B) Difference in log-odds of saying yes between accurate and inaccurate source by population. Median estimated probability, 75% and 95% HDCI.

In sum, while the Shuar-Achuar pattern does not differ from other populations in terms of how source-accuracy predicts lying attributions (except for Hungary), it does differ from the other 13 populations in the difference between predictions and commitments (i.e., FC, IMD).

Question 3: Does severity of the outcome influence Shuar-Achuar lying judgments?

We also hypothesized that the severity of the outcome might be causing the observed differences in judgments between IMD and FC scenarios for Shuar-Achuar people. Given that the original FC(s-i+e-) and IMD(s+i-e+) scenarios vary greatly in the severity of the outcome (e.g., in the FC scenario nobody dies, whereas the IMD prognosis implies the death of the patient), we performed a study with a crossed factorial design that decouples IMD vs FC from severity of the outcome. In one of the new scenarios FC(s+i+e-), an ingroup member who owns a truck commits to bringing

a seriously ill girl from a rural community to the hospital, but the weather conditions (a storm) prevent him from picking her up, and she dies. In the other new scenario IMD(s-i-e+), a dentist's prognosis implies a toothache that does not actually happen —a toothache being much less severe than the death of the patient in the original Doctor scenario (See Table 1.2 and Figure 1.2 for estimates and SM for full text). To answer this question recruited 48 community participants from Pastaza Province in 2017.
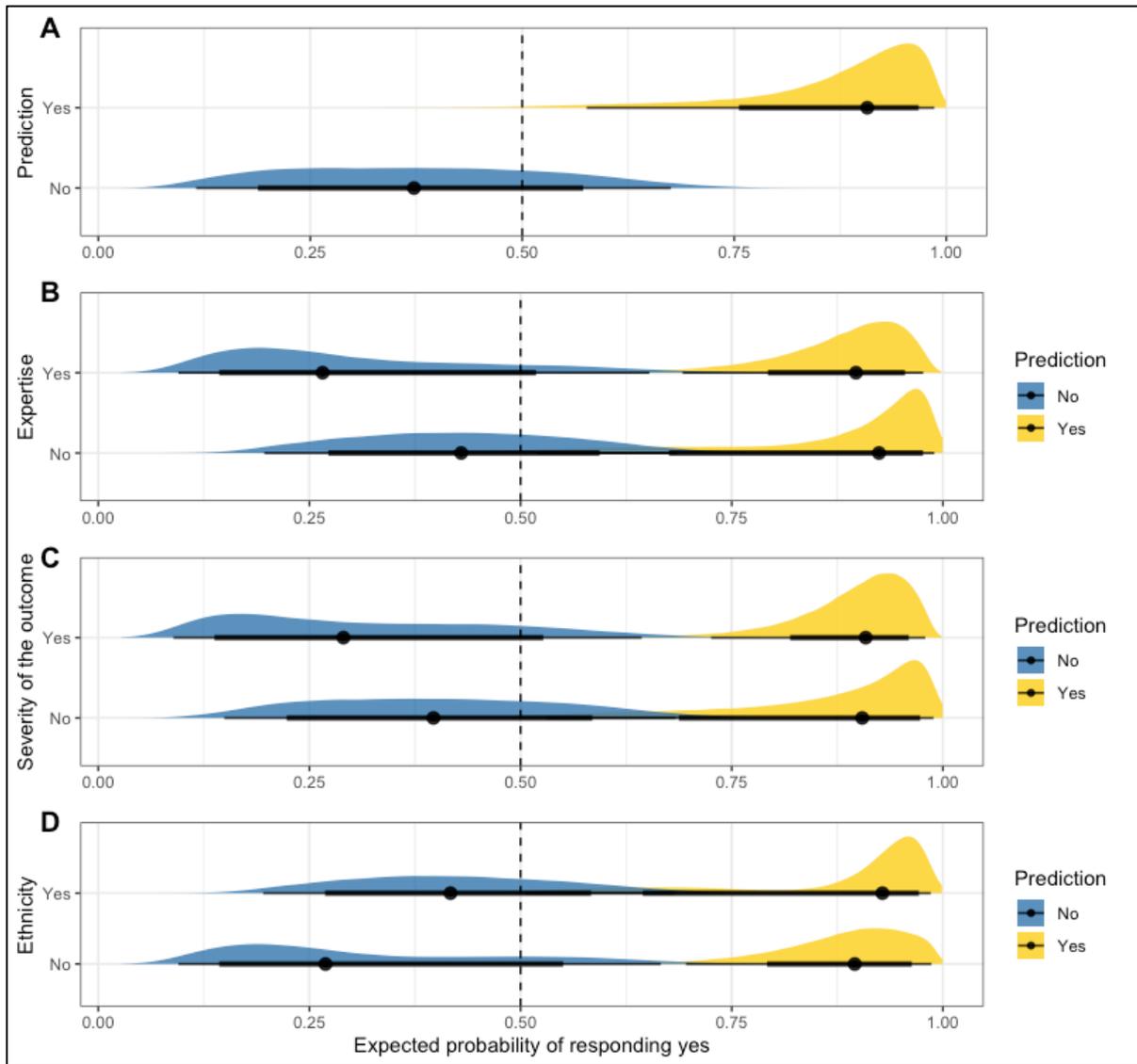
Figure 1.4: Distributions of parameter estimates for lying attribution in a multilevel Bayesian regression model. Panel A shows the differences in posterior distributions between prediction and commitment scenarios. Panels B, C, and D, show the distributions by type of speech act (Prediction vs. commitment), and Expertise, Severity of the outcome and ethnicity. Results for Shuar-Achuar participants across 18 scenarios. Circle = median estimated probability, thick line = 75% HDCI, thin line = 95% HDCI.

Contrary to our hypothesis, participants were more inclined to attribute a lie to the Dentist (IMD(s-i-e+)) and Doctor (IMD(s+i-e+)) than to Carl (FC(s-i+e-)) and the Truck driver (FC(s+i+e-)), despite large variations in outcome severity within the IMD and FC groups of scenarios. The median posterior estimates, and the 95% HDCI values are presented in Table 1.2. This suggests that the severity of the outcome was not the key factor driving differences in judgments across

these scenarios. Additionally, a Bayesian multilevel logistic regression suggested that the severity of the outcome does not have a significant effect on the probability attributing a lie (Figure 1.4, Panel C).

In sum, the posterior probability density distribution suggest that participants are more likely to attribute a lie to the Dentist (IMD(s-i-e+)) and Doctor (IMD(s+i-e+)) than to Carl (FC(s-i+e-)) and the Truck driver (FC(s+i+e-)) (see Table 1.2 and Figure 1.2 for estimates). Next, we sought to rule out another possible confound, having to do with group membership of the scenario characters: in all versions of FC scenarios, the protagonists were explicitly marked as ingroup members (Shuar people), while in all IMD scenarios the protagonists were outgroup members (non-Shuar people).

Question 4: Is there an ingroup bias in the attribution of lying?

In the original FC and IMD scenarios, Carl was identified as a Shuar man, while the Doctor was not. We conducted a follow-up study to assess the hypothesis that the Shuar-Achuar attributions pattern was the result of ethnic identity (reflecting either group stereotypes, group-specific norms, or an ingroup bias). To decouple group membership from statement type, we designed two new scenarios: one in which the Doctor was replaced by a (Shuar) shaman IMD(s+i+e+), and another in which Carl was replaced by a non-Shuar man (outgroup member) FC(s-i-e-). For this study we recruited 41 Shuar-Achuar participants in 2018. The results suggested that differences in ethnicity do not drive the differences in judgments between the FC and IMD groups of scenarios (see Table 1.2 and Figure 1.2 for estimates). Although participants attributed lying more to an outgroup member than to a Shuar man in the FC group, they were more likely to attribute a lie to the Shaman, than to the Doctor, in the IMD group. Figure 1.4, Panel D shows that speaker's ethnicity (ingroup

vs outgroup) does not significantly affect the probability of lying attributions, while the type of speech act, which we will present next, does significantly influence subject judgements.

Next, we considered two hypotheses. The first one was that the lying attribution could be mediated by the fact that the speaker is an expert, as in the case of the Doctor IMD(s+i-e+), the Shaman IMD(s+i+e+), or the Dentist IMD(s-i-e+). The second hypothesis was that the nature of the speech act – commitments versus predictions—was driving the differences in judgments. While both groups of scenarios involve a speaker producing a statement that turns to be false, in one case the statement establishes a sort of promise or commitment, whereas in the medical prognosis the statement is a prediction about what will happen in the future. The next study asks whether this difference in type of speech act what differences in the attribution is of lying between these scenarios.

Question 5: Are expertise and the type of speech act relevant?

In the course of investigating why Shuar-Achuar participants judged the Doctor's assertion to be a lie in the original IMD scenario, we created a total of nine vignettes FC(s-i-e-), FC(s-i-e+), FC(s+i-e+), IP(s-i-e-), IMD(s+i+e-), IMD(s-i+e-), IP(rain), IP(price), IP(bridge), that varied in a variety of dimensions (expertise, severity of the outcome, ethnicity of the speaker, and speech act) in order to explore what is close to a full factorial design. For this study we recruited 41 subjects from a Shuar-Achuar community in Pastaza province. To explore the hypothesis that the attribution of lying was mediated by the expertise of the speaker we contrasted, for instance, the truck driver scenario FC(s+i+e-) with one in which a doctor commits to come to rescue a person with an ambulance FC(s+i-e+). In another comparison, we contrasted a prediction made by a Doctor IP(s-i-e-), not about a health issue but about the condition of a truck, which obviously was

not in the Doctor's domain of expertise. See SM for full text of these and other scenarios. Figure 1.4, Panel B shows that the expertise of the speaker does not affect the probability of attributing a lie. Instead, there is an effect of the speech act in which the assertion is framed.

As we mentioned, we realized post-hoc that these speech acts could be grouped into two categories: commitments (FC) and predictions (IMD and IP). We hypothesized that Shuar people might have norms about when one should or shouldn't make a prediction or commitment, that might lead to differences in whether and when predictions and commitments are considered lies. We found results that support this conjecture. Figure 1.4, Panel A shows that the probability of attributing a lie clearly differs between predictions and commitments. Also, both Table 1.2 and Figure 1.2, in which scenarios were ordered by the median of the posterior distribution that resulted from a Bayesian multilevel logistic regression (with scenario and participant as random effects), show that the probability of attributing a lie increases when the scenarios involve a predictive statement about the future and decrease when the statement is part of an excused commitment.

Moreover, we observed that for commitments that are not fulfilled, what makes them a lie or not in the eyes of Shuar-Achuar judges is whether or not there is external justification for not fulfilling the commitment, in the form of some unforeseen natural event (what might be called "force majeure" in a legal context). For example, a flooding river excuses someone from their prior commitment to attend a meeting (original FC scenario). Interestingly, however, this is not the case for incorrect predictions: unforeseen events that render the prediction false do not "excuse" the speaker from the false prediction in the same way as for commitments. For instance, in the scenario IP(rain) in which the speaker says "I'm sure that tomorrow it is going to rain" the causal process that renders the prediction false is a natural one, similar to a flooding or a wind storm – as in some

of the commitment scenarios – but the proportion of attribution of lies for this scenario was very high (median estimate 0.956, l-95% HDCI = 0.885, h-95% HDCI = 0.996).

Question 6: Do attributions of the speaker's belief in what they are saying and their intention to deceive influence the attribution of lying?

The classical definition of lying in the philosophy literature involves three components. To lie, someone must be saying something false, which they believe to be false, and they must be doing it with the intent to deceive the addressee. So far, the judgments we have been analyzing have been "lying" judgments (i.e., did the character in the story lie?). Besides the question of lying attribution, we asked several other judgments (for all scenarios except FC(s-i+e-) and IMD(s+i-e+)), including whether the speaker in the story believed what they were saying (which we will call "belief" in the truth of their statement, or "belief-in-p" for short), and whether the speaker in the story intended to deceive listeners through their speech act (which we will call "intention to deceive").

This enabled us to examine whether Shuar-Achuar conceptualizations of lying align with the classical philosophical one along these dimensions, by examining the relationship between lying judgments and judgments of speaker's belief, and between lying judgments and judgments of speaker intent.

Figure 1.5, Panel A, shows the relationship between the proportion of participants who attributed lying and the proportion who attributed belief-in-p, for each scenario (with a sample of 500 posterior regression slopes to indicate the statistical strength of the relationship). There was a clear negative relationship between lying attributions and attributions of belief in the statement. However, there were exceptions: in *several scenarios, the majority of participants said both that the speaker was lying and that he believed what he was saying* (see for instance, IMD(s+i-e+i),

IMD(s+i+e+), IMD(s+i-e+a), IMD(s-i-e+), IP(bridge) and IP(s-i-e-)), in the upper right corner of

Figure 1.5, Panel A). This result challenges the universality of the concept of lying as it is presented

in the philosophical literature. While that literature discusses cases in which one can lie by

asserting something factually true (true-to-the-facts) in a pragmatically tricky way, here we find

cases in which speakers are held to lie despite believing what they are saying (true-to-the-mental-

state of the speaker, or belief-in-p)—similar, perhaps, to what Danziger (2010) found for Mopán

Maya speakers. The correlation between the median point estimate of probability of lying and

probability of attributing a belief-in-p to the speaker is -0.556 [l-95% HDCI = -0.664, h-95% HDCI

= -0.452].
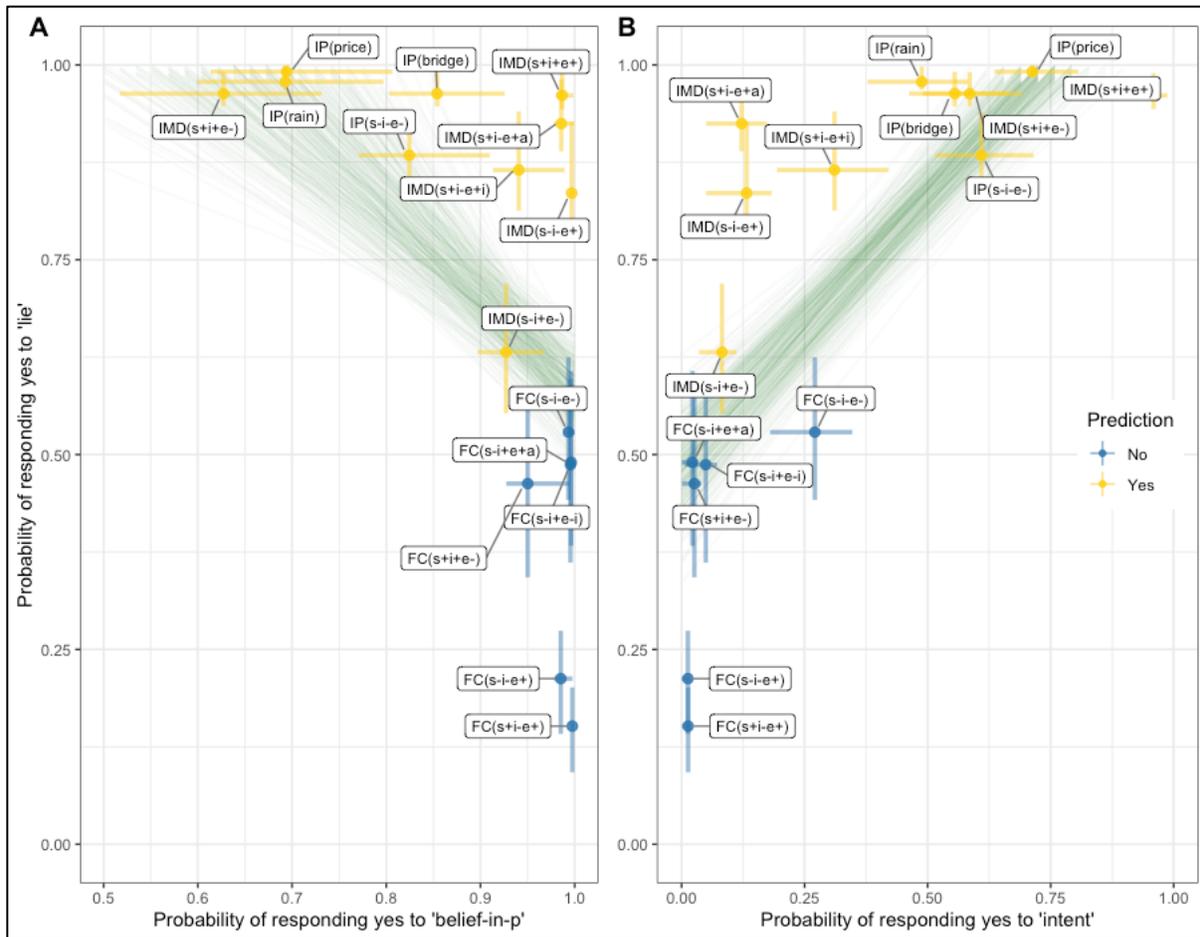
Figure 1.5: A) Lying-Attributions vs. Speaker's Belief-in-p Attributions for 16 scenarios. B): Lying-Attributions vs. Speaker' Lying-Intention Attributions for 16 scenarios. Blue dots represent Failed Commitments and yellow dots represent Incorrect Predictions. Circles = Median estimated probabilities of each response; bars = 67% HDCI of those estimates. The lines are 500 different regressions slopes from the posterior; darker areas with more overlapping lines indicate more probable estimates of the regression.

Similarly, Figure 1.5, Panel B shows the relationship between the proportion of participants who attributed lying and the proportion who attributed intention to lie, for each scenario (with 500 posterior regression slopes to indicate the estimated strength of the relationship). The correlation between the median point estimate of probability of lying and probability of attributing an intention of lying to the speaker is 0.726 [l-95% HDCI = 0.623, h-95% HDCI = 0.818]. See also Figure 1.6 for an estimate of the median attribution of speaker's belief-in-p and intention to deceive for each scenario.

INDEX	DESIGN	MEDIAN	LHDCI	HHDCI		INDEX	DESIGN	MEDIAN	LHDCI	HHDCI
1	FC(s+i-e+)	0.987	0.957	1.000		1	IMD(s+i+e+)	0.937	0.840	0.991
2	FC(s-i+e+a)	0.981	0.935	1.000		2	IP(price)	0.703	0.491	0.881
3	IMD(s-i-e+)	0.973	0.913	0.999		3	IP(s-i-e-)	0.621	0.394	0.821
4	FC(s-i-e-)	0.972	0.924	0.998		4	IMD(s+i+e-)	0.596	0.366	0.803
5	FC(s-i-e+)	0.969	0.920	0.996		5	IP(bridge)	0.558	0.339	0.782
6	FC(s-i+e-i)	0.968	0.900	0.999		6	IP(rain)	0.504	0.281	0.726
7	IMD(s+i+e+)	0.959	0.900	0.995		7	IMD(s+i-e+i)	0.354	0.127	0.622
8	IMD(s+i-e+a)	0.954	0.877	0.997		8	FC(s-i-e-)	0.285	0.112	0.499
9	FC(s+i+e-)	0.921	0.802	0.989		9	IMD(s-i-e+)	0.183	0.041	0.397
10	IMD(s+i-e+i)	0.901	0.771	0.979		10	IMD(s+i-e+a)	0.164	0.039	0.369
11	IMD(s-i+e-)	0.868	0.754	0.956		11	IMD(s-i+e-)	0.113	0.022	0.247
12	IP(bridge)	0.804	0.665	0.920		12	FC(s-i+e-i)	0.076	0.006	0.220
13	IP(s-i-e-)	0.763	0.612	0.889		13	FC(s+i+e-)	0.048	0.002	0.153
14	IP(price)	0.636	0.463	0.795		14	FC(s-i+e+a)	0.041	0.002	0.134
15	IP(rain)	0.636	0.452	0.791		15	FC(s-i-e+)	0.025	0.001	0.080
16	IMD(s+i+e-)	0.583	0.407	0.762		16	FC(s+i-e+)	0.025	0.001	0.081

Figure 1.6: Left: median estimated probabilities and upper and lower 95% HDCI for attributions of speaker's belief-in-p by scenario. Right, median estimated probabilities and upper and lower 95% HDCI for attributions of speaker's intention to deceive by scenario.

Question 7: What predicts attributions of lying, belief, and intention across the scenarios?

We also explored the nature of the factors that underlie the relationship between lying, speaker's belief-in-p, and speakers' intention to deceive. In order to do this, we ran three Bayesian GLM (Logistic) models with scenario design and participant as random effects to estimate effects of four scenario underlying factors: 1) Prediction vs commitments; 2) Speaker's ethnicity (Shuar-Achuar vs non-Shuar-Achuar); 3) Severity of the outcome; and 4) Speaker's expertise (expert vs non expert in the domain of the assertion).

Figure 1.7 shows the effect of the aforementioned factors on attributions of lying (Panel A), belief-in-p (Panel B), and intent to lie (Panel C). Panel A shows that there is strong effect of prediction on the attribution of lying based on a median posterior estimate: a speech act in which the speaker's assertion is a prediction instead of a commitment adds 1.576 to the log-odds of lying

attributions holding constant ethnicity, severity of the outcome, and expertise [l-95% HDCI = 0.526, h-95% HDCI = 2.657]. Additionally, men show 0.480 lower log odds of attributing a lie than women, holding constant the other variables [l-95% HDCI = -0.923, h-95% HDCI = -0.026]. In other words, men are less likely to attribute a lie than women in the featured scenarios.

Figure 1.7, Panel B shows the regression coefficients for the attribution of the speaker's belief-in-p based on the median estimates. In cases in which the speech act in which the speaker's assertion is a prediction, instead of a commitment, the model estimated the subtraction of 0.869 from the log-odds of the attribution of "belief-in-p", controlling for ethnicity, severity of the outcome, and expertise [l-95% HDCI = -1.789, h-95% HDCI = 0.078].

Finally, we explored the relationship between the attribution of intention of lying and the underlying design factors. The estimates are represented in Figure 1.7, Panel C. Based on the median estimate, the results of the model suggest an additive effect of prediction on the log-odds of the dependent variable by adding 0.952 [l-95% HDCI = -0.014, h-95% HDCI = 2.082], holding constant the other variables.
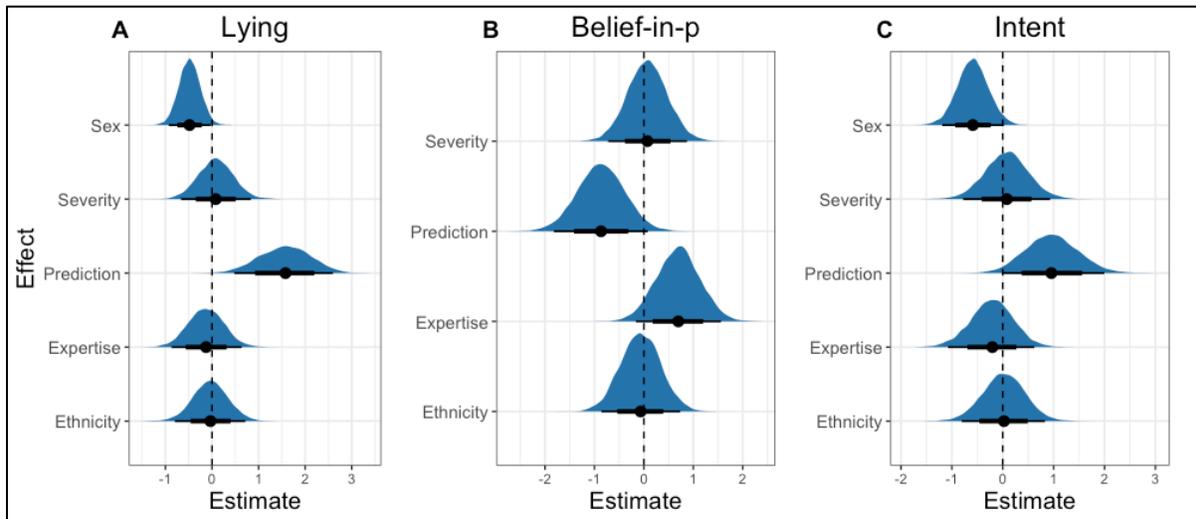
Figure 1.7:A) Estimates and effects for lying attribution. B) Estimates and effects for the attribution of speaker's true belief in the content of the statement. C) Posterior estimate for the attribution of speaker's intention to lie. Circle = median estimated probability, thick line = 75% HDCI, thin line = 95% HDCI.

4. GENERAL DISCUSSION

Our goal was to investigate whether a particular epistemic concept, lying, has universal conceptual features, or is culturally variable. We began with a hunch that was the result of our ethnographic experience with Shuar and Achuar populations. We ended up discovering that Shuar / Achuar people invoke the concept of "lying" in cases where people in the many other populations we sampled did not. But is this because the *concept* of lying is different for Shuar / Achuar speakers? Or is it because the concept is the same, but applied to different cases due to other considerations, like different pragmatic norms or beliefs in what it is possible to know?

We found evidence consistent with both phenomena – conceptual differences, and extra-conceptual differences in how the concept is applied. For conceptual differences we found, for example, that Shuar / Achuar people sometimes attributed lies to people who *believe what they are saying* (belief-in-p)—something that is inconsistent with the standard philosophical concept of a lie. On the other hand, judgments that false predictions are lies can be made sense of in terms of

the standard philosophical concept, if one assumes that knowledge about the future is possible—in which case, one can lie about it, and non-Shuar people would have no problem understanding this meaning of "lie". For example, we might say, "the fortune teller looked into the crystal ball, saw my future, and lied to me about it". That could be an ordinary use of the standard philosophical concept of a lie, *if* one thought it was possible to know the future. Our investigations, then, uncovered both evidence for differences in the *concept* of lying (e.g., lying while believing-in-p), and in the way the concept is applied (i.e., towards predictions).

What is most noteworthy in our findings are the differences in how Shuar-Achuar speakers attributed lying, compared to all other populations sampled. As we have shown, the largest differences from other speech communities occur for attributions of lies about the future in the context of predictions, but not in the context of commitments: Shuar-Achuar speakers considered most false predictions about the future to be lies, where others did not. What explains this?

Our method, in which we varied the contents of vignettes in systematic ways, has allowed us to rule out several possible explanations for the effect, such as that this only holds true of experts (e.g., doctors) or non-Shuar-Achuar people. Through ruling out alternatives, we believe we have narrowed the phenomenon down to false predictions, as opposed to (excused) commitments: i.e., a particular category of speech act. But why is there such a sharp difference between Shuar-Achuar and other peoples' extensions of the term lying to false predictions?

We suggest that there may be at least two factors that explain the culturally particular use of "lying" in Shuar-Achuar communities: *ontological commitments*, in particular, beliefs about access to reality that determine what it is or is not possible to know; and *pragmatic norms* about when it is acceptable to make predictions about the future.

By "ontological commitments," here we specifically have in mind beliefs about human access to future reality, which in turn determine whether and when it is possible to know about the future (an epistemic commitment or assumption). In fact, we all have some beliefs regarding what we can "know" about the future, where "knowing" might be glossed as something a reasonable person, under proper epistemic conditions, could expect to happen with a high degree of certainty.

Consider the following statement:

A) *When Sue told Henry the movie would start at 8 PM, she lied.*

Many readers, we suspect, would consider this an ordinary and unproblematic statement if Sue knew the actual time the movie would start (say, 9 PM), but meant to deceive Henry. Importantly, this only makes sense if we accept that it is possible for Sue to know what time the movie will start, in advance. Here, it seems quite ordinary to assume that Sue read the movie schedule, which said the movie would start at 9, and deceived Henry about it. Importantly, the background assumption is that she is talking about when the movie is *scheduled*, and it is reasonable to assume it will start on time unless something unusual happens that she can't foresee.

Now consider the following:

Sue consulted the movie schedule and saw that it would start at 8 PM. She told Henry the movie would start at 8 PM. However, the movie theater burned down at 7 PM, so the movie did not start at 8 PM.

B) *When Sue told Henry the movie would start at 8 PM, she lied.*

(B) is of course the exact same assertion as (A), but now does not seem a proper use of "lied." A main reason is that in (B), Sue believes what she asserted, and did not intend to deceive Henry. It's also the case that a movie theater burning down right before one is about to see a film is an extraordinarily rare event, so most people would regard Sue as having *epistemic warrant* for making her statement. She did not lie, even though what she said turned out to be false.

Now consider the following case for comparison:

Dr. Smith consults a highly accurate test for cancer and determines that Helen has a severe case of a terminal, uncurable cancer. No previous person diagnosed with this has survived more than a year. Dr. Smith tells Helen that, unfortunately, she has less than a year to live. However, two years later, Helen is still alive.

   C) When Dr. Smith told Helen she had less than a year to live, he lied.

The large majority of Shuar-Achuar speakers agreed with a statement similar to (C), but we could find no other population where a majority of people agreed with this use of the term "lied". Notably, in both (B) and (C), Sue and Dr. Smith assert something that they believe at the time, do not intend to deceive, and, arguably, are justified, or epistemically warranted, in their assertions given the information available to them. What is the difference?

The difference appears to lie in the last part—what is justified to believe or assume. Something about the prediction context, here, for Shuar-Achuar speakers, makes it such that unforeseen *force majeure* type events are not exculpatory (as they might be, for English speakers, in the movie theater burning down scenario). Why not?

We see at least two possibilities, which require future work to disentangle. These both relate to the interaction among A) culturally local beliefs about how the world works—ontological commitments— B) pragmatic norms about the permissibility of certain speech acts or C) to specific felicity.

Possibility 1: The epistemic opacity of the future

a) Shuar-Achuar speakers believe it is *impossible* to know the future (ontological commitment).

b) One should only assert things one knows to be true (norm of assertion).

c) Therefore, any (unqualified) prediction is regarded as a lie (by "unqualified" here, we mean "unhedged" statements, or flat assertions; a qualified statement would be something like "I believe there is a high probability of *p* happening, but I can't be 100% sure)

Possibility 2: The epistemic accessibility of the future

a) Shuar-Achuar speakers believe is it *possible* to know the future, for some people under some conditions (e.g., expert diagnoses; visions) (ontological commitment; note that the conditions that enable the possibility of knowledge are sometimes called *warranting conditions*)

b) One should only assert things one knows to be true (sometimes called the *norm of assertion* (J. Turri, 2016a, 2016b); a pragmatic norm that hinges on the warranting conditions in (a) which determine what it is possible to know).

c) Therefore, predictions about the future that turn out to be true are not lies.

d) Predictions that turn out to be false—if they were stated in a confident / unqualified way— are lies (because they are evidence that you did not know *p* when you asserted *p*).

Both of these possibilities involve an interaction between ontological commitments and pragmatic norms, but in different ways. Testing between them requires seeing if Shuar-Achuar speakers regard any predictive statement about the future to be a lie (Possibility 1), or if only false predictive statements about the future are regarded as lies (Possibility 2).

There is some ethnographical evidence to support the claim that there are cultural constructions by which Chicham cultural communities accept that is possible to know the future. One of these examples comes from dreams. In Shuar-Achuar belief systems, dreams are a "window" into future events. This is similar to the visions that a person can have during the consumption of hallucinogenic plant base beverages like *tsaank* (tobacco), *natem* (ayahuasca), or *maiküa* (*datura arborea*) (Descola, 1996, 2014; Harner, 1984; Mader, 1999). For instance, someone can have the vision of a city during a hallucinogenic experience and consider it as a glimpse into a future life in an urban center. In some cases, depending on the context and content of the dream or vision, it is considered important to keep it secret to avoid a change in course of events. This would not apply to medical diagnoses, which are expected to be shared with the patient, and are not obtained through visions; but such predictions about life and death matters could still be seen as special knowledge similar to premonition.

Related to the knowability of the future is that fact that for Chicham belief systems a shaman is an authority that has access to the future (Descola, 1996; Harner, 1984; Mader, 1999). This belief might explain our results in which predictions made by experts were considered a lie in which the speaker was believing in the content of the statement (belief-in-p) in the following terms (See figure 1.5, Panel A, scenarios in the upper right corner). It might be the case that when a shaman makes a prediction that turns to be false, he is mistaken about what he saw (or infered from the vision). Therefore, he believes it but doesn't know it (Foley, 2012). But it could still be a "lie"

because of the pragmatic injunction not to assert something unless you know it – and he didn't know it.

The last point that we have to disentangle is why statements about the future in the way of commitments are treated different than predictions. A key difference is this: a prediction is a statement about *what will happen*, whereas a commitment is a statement about *what you intend to do.* Crucially, then, the intentions of a speaker are relevant for the unfolding of future events in commitments, in a way that they are not for predictions. A prediction is an event that speaker S claims will come true whether or not S intends it (e.g., "Trump will win the next election"). A commitment, on the other hand, can only come true if the speaker carries out his intended / promised actions.

Intuitively, it makes sense that pragmatic norms for predictions and commitments might differ— in particular, pragmatic norms about when it is "reasonable" to predict something, versus "reasonable" to commit to something. Of course, in both cases, knowledge and expectations about the future are relevant; committing to do something that one can reasonably expect one *won't* be able to do is deceptive, and might be considered a lie. But, given that commitments involve still-unrealized actions, it seems plausible that the possibility of unforeseen "acts of god" that prevent a promised action from taking place might be part of the pragmatic assumptions underlying commitments and promises. If you are not asserting that something *will* happen, only that you *intend* to do it, then if something very unexpected occurs that makes it so that you can't keep your commitment, it may be excused. This differs from a bald assertion that some future event *will* occur, unmediated by your intentions. If made in an unqualified way (e.g., without "I think this will happen" or "I believe this will happen") – "this *will* happen" – then, if one has a very deterministic belief about the future as well as belief in the possibility of transparent epistemic

access to the future, the norm of assertion makes it a lie if what one is predicting doesn't come true. If commitments reflect intentions to do things, on the other hand, the intention can still be sincere even if unforeseen events prevent the intended act from being completed.

Here, then, is the way we envision the logic of commitments for Shuar-Achuar speakers to relate to possibility 2, above:

Intentions about the future (commitments)

a) Commitments assert an intention to do something in the future.

b) What makes a commitment pragmatically acceptable are (1) the sincere intentions of the speaker and (2) reasonable beliefs about being able to carry out the promised act—which entails expectations and / or knowledge about the future.

c) Therefore, a commitment can be a "lie" if (1) the intention to carry out the promised action was not sincere or (2) the speaker's expectations about future events were such that they knew they would be unlikely to carry out the promised action.

d) Commitments are not lies when an unforeseen event prevent its fulfillment (not felicitous, but excused).

Interestingly, if Possibility 2 is the case and Shuar-Achuar speakers believe that some speakers can have transparent access to the future, then all that is necessary to determine if a prediction is a lie is that 1) the speaker is in a position to have known the future (e.g., a doctor or shaman or someone who saw something in a vision) and 2) the prediction turns out to be false.

To determine if a commitment was a lie, however, requires not only an inference about what the speaker *knew*, but also about whether they *intended* to carry out the act. If the committed action

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doesn't come to pass, it could be because unforeseen events prevented it (which would excuse the failed commitment), or because the commitment was insincere (which would not excuse it, and would make it a lie). Given that speaker intentions matter (and can be opaque), we might expect that judges will use what happened, *post hoc,* to make inferences about whether or not the commitment was sincere.

This could explain why Shuar-Achuar participants considered (D) a lie but not (E):

D) *The mayor of L.A. said that he would come to the event yesterday, but he never showed up.*

E) *The mayor of L.A. said that he would come to the event yesterday but given the earthquake that affected the north of the city, he never showed up*

(D) seems like a lie, *post hoc,* because nothing happened to prevent the mayor from showing up. Thus, the best explanation is that his commitment must have been insincere (a lie). In (E), however, even a sincere mayor would have been prevented from carrying out his promise. Thus, against a background "good faith" assumption that commitments are sincere, only unforeseen events are necessary to explain (E). Therefore, it is reasonable to judge it not a lie, and to excuse the mayor for not showing up.

However, we recognize that our analysis is speculative and more research is needed. Some future work should be focus of the distinctions between epistemic concepts and different types of speech acts in languages other than English. Additionally, it is important to do more follow up studies to determine the relationship between lying and other epistemic concepts and ontological commitments in Chicham communities – especially the relationship with language and knowability of the future.

Finally, our international sample shows that although there is a clear difference between the Shuar-Achuar sample and the other populations, there is also variation among the other samples that is should be studied. For instance, the difference in log-odds of saying yes between prediction and commitments for Viet Nam seems to be different from the results found in other populations. This could mean that there are some particularities of the concept of lying in Viet Nam that relate to speeach acts in a way that it might be worth addressing. Another example is the effect of accurate and inaccurate sources in Hungary, which also shows a relevant effect size when is compared to other populations (e.g., Shuar-Achuar).

5. CONCLUSION

As mentioned in at the beginning of this work, an important concept in the recent study of human communication is *epistemic vigilance* (Sperber et al., 2010). Many species have evolved mechanisms to assess the quality of the source (e.g., accurate, trustable, etc.) and the and the information that (e.g., more or less useful) they use to cope with biological challenges. Humans, particularly, have a very refined set of cognitive tools to generate epistemic intuitions. While some of these tools come, for instance, in the format of moral judgements (Knobe, 2003), others are encoded in concepts that map onto epistemic features (e.g., true, false, knowledge, understanding, lying, deception, etc.) (Craig, 1999; Hannon, 2019; Sorensen, 2010). In this article we focused exclusively on the concept of lying while putting the emphasis on one population in which, as is the case for many small-scale societies, epistemic concepts are understudied.

We found that while Shuar-Achuar concept of lying share similarities with the English or the Spanish notion, there are particularities that contrast the concept with the other thirteen populations that we sampled. Our strategy was to use vignettes to explore a factorial design that allowed us to

disentangle such differences and confirm the commonalities. By carefully changing the structure of the scenarios that we presented to the subjects we arrived at an empirical result in which the scenarios seemed to coalesce in two groups: predictions, on the one hand, and commitments, on the other.

However, our research design was not able to fully explain the reasons for the difference. Therefore, we proceeded analytically and posited that the specificity of the concept of lying in Shuar-Achuar linguistic and cultural communities can be explained by a combination of an ontological stance, and specific pragmatic features. The ontological stance, which we based also on the existing ethnographic literature, states that lying-by-predicting is possible if we think that it is possible to know the future. The pragmatic component of the explanation relates to the differences between felicity conditions in which predictions and commitments are based. While both speech acts refer to the future, commitments do it by relying on the sincere intention of the speaker rather than in factual knowledge, as predictions do.

CHAPTER 2

INTENTIONS, FALSEHOODS, AND BELIEFS:

A STUDY OF THE PROTOTYPICAL CONCEPT OF LYING IN ELEVEN

LANGUAGES

1. INTRODUCTION

If we look into the political news from the last five years, as well as the extraordinary explosion of mis[?]information that was caused by the COVID-19 pandemic, we will see that the headlines are replete with terms that refer to different forms of falsehood and insincerity. Concepts like "lying", "bullshit", "fraud", "hoax", and "fake news" became part of people's daily vocabulary, not just in the US but around the globe. This has prompted renewed interest in the phenomena of lying, disinformation, and misinformation among academics (Fallis, 2015).

Despite the effort, our empirical knowledge about what the concept of "lying" means to ordinary people around the world, and whether versions of this term in different languages essentially mean the same thing, is still quite limited. This limitation is even more pronounced because of the hegemony of English as the primary language for research. Here, using the multi-site research structure of *The Geography of Philosophy Project,* we aimed to investigate what the concept of lying means in eleven cultural and linguistic communities. Does lying mean the same thing everywhere? If not, how does the concept vary? And to the extent that there are similarities in the concept of lying around the world, how are those similarities tied to concepts of intention, falsehood, and belief?

The Oxford Learner's Dictionary defines lying as "to say or write something that you know is not true", and the Merriam Webster Dictionary as "marked by or containing untrue statements". From these definitions, it is possible to infer that, to attribute the concept of lying, you need a competent speaker (or writer) who produces a statement and, presumably, a recipient of that message. Additionally, dictionary approaches make a reference to the *truth value* of the content of the speaker's statement. And in any situation in which a speaker makes a statement *p*, the true value of *p* can be epistemically evaluated in at least two ways: to the speaker's beliefs and to the facts. For instance, if Pete asserts that "São Paulo is the capital of Brazil," the statement can be evaluated with respect to Pete's beliefs, and / or with respect to the truth. If Pete believes what he says, then perhaps it's not a lie, as in the Oxford definition. Or, perhaps, it is the falsehood of the statement that makes it a lie, as in the Merriam-Webster definition.

Dictionaries may attempt to *describe* a concept, for readers unfamiliar with it, but it is generally agreed that most concepts cannot be reduced to their dictionary definitions (Fodor, 1998; Laurence & Margolis, 1999). In many cases, the true meanings of concepts to speakers are much more subtle and have variable shades of meaning according to context (Machery, 2009). In the case of lying, for example, people might say things that are not true, even knowingly, without implicating that they are lying, like when an actress says that she killed her partner in the context of a movie scene, or when someone says something false in the context of a game, a joke, an irony, a sarcastic commentary, or a metaphor. These kinds of scenarios have suggested to some philosophers that truth value and belief alone are not enough to capture lying. Although there are many approaches to this problem, the most widespread is to include a condition that states that, in order to lie, the speaker should have the intention to deceive the addressee (Bok, 1978; Chisholm & Feehan, 1977; Lackey, 2013; Mahon, 2008; Williams, 2010).

Even this has been contested by some authors (see Lackey (2013), Mahon (2016), and Stokke (2013b) for a review of non-deceptionism). For instance, Fallis (2009, 2010) presented the case of *coercion lies*, in which someone makes a false statement because she is under pressure to do so (e.g., under a life threat). He suggests that instead of an intention to deceive the addressee, lying involved pragmatic violation of a norm of conversation in which a speaker should not make statements that she believes to be false. Another case is Sorensen's (2010) *knowledge lies*. Here a speaker says something false not to deceive the addressee in terms of the content of the statement but to block the epistemic conditions that connect the statement with a state of affairs. The classic example is taken from the film *Spartacus*, where a Roman general wants to identify Spartacus among a group of captured slaves. When he asks who Spartacus is, all the slaves assert "I am Spartacus". Thus, every slave lied, but instead of deceiving the general, they prevented him to access the truth. Finally, Carson (2006, 2008) and Sorensen (2007) discuss *bald-faced lies* as case where a speaker says something false to an addressee who is aware that the statement is false and consequently might not be considered as being deceived. Their argument is that instead of an intent to deceive, the speaker should be in a situation in which the truth is warranted, which is independent of her intentions.

Philosophers have also considered whether it is possible to lie by saying the truth in cases in which the speaker thinks that she is saying something false, intending to deceive but actually saying something true (e.g., Turri & Turri, 2015; Wiegmann et al., 2016, 2017). Similarly, a speaker might believe something they are asserting but it turns out to be false—is it a lie (e.g., Vincent & Castelfranchi, 1981)? And can a person lie through implication, by saying something false, even if the literal content of the statement is true (e.g., Dynel, 2011; Meibauer, 2005, 2011, 2014)? There are many examples from advertising: for example, a product label stating "99% caffeine-

free" would imply to many consumers that the product is low in caffeine—even though, by weight, a standard cup of coffee is about 0.075% caffeine (Bergstrom & West, 2020)

As we see, the concept of lying is more complex than a mere dictionary definition posits, and its study deserves special attention given its centrality in the public sphere. Even when there are good reasons to think that the concept has universal properties, there are no antecedents of large-scale studies that examined lying with the wide range of societies and linguistic variation that our approach comprises. Many, but not all, prior approaches have used the common method of *conceptual analysis,* using hypothetical scenarios combined with philosophical intuitions in the search for comprehensive and ideal definitions in the form of necessary and sufficient conditions (see, for instance, (Carson, 2006; Fallis, 2009; Sorensen, 2010)). Here, in contrast, we adopt the methodology of experimental philosophy, which seeks to understand how a concept is used by ordinary speakers (Knobe, 2003; Knobe & Nichols, 2008). Rather than assuming a single, universal definition, this method allows for variation in how the concept is used and understood, both within and between speakers. We also take, as our baseline, earlier psychological research by Coleman and Kay (1981) on the concept of lying among English speakers, which adopted a "prototype" view of concepts as having potentially fuzzy semantics instead of crisp definitional meanings (Mervis & Rosch, 1981; Rosch et al., 1976; Rosch & Mervis, 1975). We adopt a modified version of their methodology here, but greatly extend its scope to look at intuitions about the meaning of lying across multiple languages and cultures.

1.3. Anthropological and comparative studies on lying

1.3.1. Ethnographic and comparative approaches

There are some studies of lying developed from an ethnographic perspective. Blum (2005), for instance, illustrated how communicating some kinds of false information is a culturally accepted practice in some interactional contexts in contemporary China. This pattern is not just common for reasons of politeness—as discussed by Sacks (1975), and Bauman (1983) in the context of Quaker prohibitions—but also in interactions between business owners and clients, particularly with foreign individuals. Brown (2002), showed that Tzetlal adults lie (*lot*) to children with the double effect of shaping their behavior in early childhood, and teaching them to not be gullible (see also Rumsey (2013) for similar findings Papua New Guinea). Similarly, in the U.S., Heyman et al. (2009) studied "parenting by lying," where parents lie to their children to influence their emotional states and behavior. In a somewhat different context, Griffiths (2012) described institutional lying to asylum-seekers by the UK Border Agency.

In a notable combination of ethnography and field experiments, Danzinger (2010) showed that Mopan Maya participants, but not US ones, attributed lies to a speaker that unknowingly and without deceptive intent says something false. Unlike Americans, Mopan Maya participants judged a statement intended to deceive as not a lie if the content of the statement turned to be true. Thus, for Mopan Mayan subjects, factual falsity seems to be more relevant when attributing a lying behavior, than the speaker's intentions and beliefs. More recently, Erut et al. (Forthcoming) found that Shuar-Achuar interlocutors, but not participants from 13 other populations, judged false predictions to be lies, independent of speakers' intentions and beliefs. Finally, Chen et al. (2013) collected compelling evidence that the concept of lying is graded in both Chinese and English, with Chinese participants more strict in the attribution of lying to false statements than Americans, but less prone to morally judge this behavior.

1.3.2. Evidence for lying as a prototypical construct

Coleman and Kay (1981) were the first to empirically implement the prototype approach for the English word "lie". In their methodological approach the authors used an *operative prototypical construct* of lying, in which A) a speaker says something that B) believes is false, C) in fact is false, D) to deceive the addressee, and then used experiments to examine how important each of these components was for the everyday application of the word "lie" in English:

2.1. *Operative Construct*

A. A speaker S, make a statement *p* to an addressee A. (statement condition, fixed)

B. S believes *p* to be false. (belief condition, +/-)

C. In fact, *p* is false. (factual condition, +/-)

D. S says *p* to A to deceive A. (intention to deceive condition, +/-)

Coleman and Kay's results showed that the prototypical case of "lying" in English is when someone says something false, believes that is false, and intends to deceive the addressee. Additionally, the authors confirmed that the concept is attributed as a matter of degree, and that some conceptual components played a bigger role in the prototype than others: in particular, beliefs were more important than the intent to deceive, which in turn were more important than the falsity of the statement: beliefs > intent > facts. But this is not always the case across cultures.

After the publication of Coleman and Kay's seminal article, some scholars replicated the study in different languages. Cole (1997) replicated the study with Makkan Arabic speakers, and found the same ranking of the underlying features of the prototype: beliefs > intent > facts. However, Hardin (2010) found that while Ecuadorian Spanish speakers judged beliefs as the first component of the prototype, unlike in English or Makkan Arabic, participants gave more importance to the factual falsity of the statement than to the speaker's intent. While she speculated that the difference might be related to the way in which intent is interpreted in cases of social lies, a series of follow up

studies allowed her to assert that for this population factual falsity is more important than intent. Thus, the relative order of features for the Spanish prototype would be beliefs > facts > intent.

Finally, Adha (2020) recently conducted a replication in Indonesian, finding that the main feature of the prototype is factual falsity, followed by intent. Based on follow-up questions after each scenario, the author concluded that Indonesian participants do not consider beliefs to be part of the prototypical concept of lying but requires further experimental confirmation.

Besides the Coleman and Kay paradigm, other authors mentioned that lying shows properties of a scalar phenomenon, either because there is no universal definition capable of address all cases, or because there are prototypical effects, such as reaction times associated to the concept (Arico & Fallis, 2013; Chen et al., 2013; Marsili, 2014, 2019; A. Turri & Turri, 2019).

1.4. Lying and moral attitudes: an addition to the original design

There is a clear relationship between truth and trust. We generally trust in those who are sincere to us and report information that correspond with the facts, and that we infer they believe is true. Also, we typically assume that speakers intend to inform and not to deceive us (Fallis, 2012; Grice, 1975; Searle, 1969). Thus, it is not surprising that a concept like lying, which is part of a set of concepts that mark the epistemic status of the message and the quality of the speaker (Sperber et al., 2010), has moral valence in many, probably most, societies (Blum, 2005; Cole, 1997; Sperber et al., 2010).

However, the moral value of lying is not always negative. For example, the notion of a "white lie," or a lie intended to protect someone from harm, is culturally widespread (Broomfield et al., 2002; Camden et al., 1984; Erat & Gneezy, 2011; Heyman et al., 2009). There are other "virtuous" forms

of lying across cultures. Gilsenan (2016) studied the use of lying as an established way to gain status among Lebanese men, particularly religious figures, by a rhetoric process in which, after deceiving the listener, the speaker reveals the truth to establish a position of intellectual dominance. The use of deception and misinformation as a rhetorical technique was instituted in Europe since the Greek sophists, and still remains in some forms of political communication and it is advocated in some political and cultural circles (Arendt, 1971; Derrida, 2002; Eco, 1968; Mielczarski, 2018; Nesmeyanov et al., 2019).

Lying has also consequences in the legal terrain (Green, 2006). According to US laws, for instance, someone who lies under oath during testimony commits the crime of perjury. But lying is permissible for the same society if it is used by a police officer during an interrogation, and the consequences of such act can be even included in the prosecution process of who is indicted (Green, 2019).

Finally, the moralization of lying has been extensively discussed in philosophy (e.g., Bok, 1978). Some have argued that there is something intrinsic in the act of lying that creates its moral value (Isenberg, 1964). This is the position of deontologists, including Augustine and Kant. Both, holding an absolutist stance, suggested that lying should be reprehensible even if results from this action someone can be saved from death or suffering (Carson, 2019; Decosimo, 2010; Feehan, 1990; Mahon, 2006; Wheeler, 2007). But not everybody accepts this extreme position, and the use of lying for beneficial reasons is defended by utilitarians (act and rule utilitarians) (Carson, 2019). These considerations suggest that there may be considerable cultural, individual, and contextual variation in how lying is morally evaluated.

To study how lying is moralized, we added some items to Coleman and Kay's original design. We asked participants to agree or disagree with A) a statement that states that the speaker did

something bad; B) a statement that states that the speaker had the intention to deceive the listener; and C) a statement that states that the speaker was insincere. These measures helped us to understand how the concept is moralized when it is applied to different degrees of prototypicality, and if its moral value changes from one cultural and linguistic setting to another as some previous studies suggested (Blum, 2005; Chen et al., 2013; Griffiths, 2012; Hardin, 2010; Sweetser, 1987).

1.5. Research questions, hypothesis, and predictions

Before moving forward with the methods and the results, we considered it relevant to present the main research questions that we aimed to answer and what were our initial predictions based on the literature reviewed so far.

Question 1: Is there a prototypical structure for the concept of lying?

- Prediction 1: We predicted that the concept shows a prototypical (or scalar) structure.

Question 2: Given the main discussions in the philosophical literature, what is the hierarchical role of intentions, facts, and beliefs in the way subjects attribute lying?

- Prediction 2: We predicted that the prototype articulates its constituents in a hierarchical way.

Question 3: Are intentions, facts, and beliefs pondered in the same way across culture and languages?

- Prediction 3: However, we predicted that the prototypical structure is instantiated in different ways across cultures and languages.

Question 4: How is lying moralized across cultures-languages and demographic dimensions?

- Prediction 4: Based on anecdotal and ethnographic reports, we predicted some degree of cultural variation.

Question 5: How do the underlying features of "lying" relate to the attribution of intention to deceive, insincerity, and "telling a lie" attributions?

- We did not have predictions.

2. MATERIALS AND METHODS

Between January 2019 and March 2021, 1307 participants from 10 countries (China, Ecuador, Japan, Korea, Morocco, Peru, Slovakia, South Africa, Ukraine, and United States) were recruited through the *Geography of Philosophy Project* field structure. Additionally, the study covered eleven languages: Afrikaans, Arabic, Chinese Mandarin, English, isiZulu, Japanese, Korean, Shipibo, Slovak, Spanish, and Ukrainian (see Supplemental Materials (SM) for more details).

Subjects were presented by a set of eight scenarios based on the *Operative Construct* (2.1), where just minor cultural modifications were done to the original text developed in Coleman and Key (1981). These scenarios were presented in a random order followed by five statements for which they were asked to answer if they agreed or not by a five-points Likert scale. See Box 2.1 for an example of scenario, statements, and Likert scale items, Box 2.2 to see the full text of all scenarios, and Table 2.2 for the factors that apply to each vignette.

To adapt the stimuli to different cultural context and languages, we modified, for instance, the name of the characters. After doing the English version, each Geography of Philosophy Project field team proceeded to do a translation and back-translation that was revised by the first author and other collaborators. After checking for discrepancies between the English original version and

the (English) back-translation, the materials were adjusted accordingly. There is nonetheless, one

caveat: the Shipibo interview was translated on the fly from Spanish. For this and other reasons

that we will discuss later in the next section, we've decided to leave this sample out of the analysis.

Please read the following scenario carefully and then rate your agreement or disagreement with the statements that follow:

"Moe has eaten the cake Juliet was intending to serve to company. Juliet asks Moe, 'Did you eat the cake?' Moe says, 'No, it was the dog'".

1. **Moe lied.**
   ☐ Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree
2. **Moe did something bad.**
   ☐ Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree
3. **Moe was insincere.**
   ☐ Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree
4. **Moe had the intention to deceive Juliet.**
   ☐ Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree
5. **Moe told a lie. ("Moe transmitted a lie" for Korean and Japanese)**
   ☐ Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree

Box 2.1: Example of scenario 1, statements, and Likert scale

Operative-Construct-Based Scenarios			
Scenario	P is false	S believes p is false	S intends to deceive A
1	+	+	+
2	-	-	-
3	+	-	+
4	-	+	+
5	+	+	-
6	-	-	+
7	+	-	-
8	-	+	-

Table 2.2: Full factorial design by scenario based on the operative construct.

SCENARIOS

1- Moe has eaten the cake Juliet was intending to serve to company. Juliet asks Moe, 'Did you eat the cake?' Moe says, "No, it was the dog".

2- Daniel, John, and Lana are having lunch. When Daniel goes to the bathroom, John eats a bunch of Daniel's French fries. When Daniel comes back and sees his plate, he says, "Lana, did you eat my fries?" Lana replies, "No, John did".

3- Carl believes he has to pass the pharmacy to get to the ice cream store, but he is wrong about this because the pharmacy has moved. Carl's mother doesn't approve of ice cream because she thinks that Carl is overweight. As he is going out the door intending to go to the ice-cream store, Carl's mother asks him where he is going. He says, "I am going by the pharmacy".

4- One morning Katerina has an arithmetic test she hasn't studied for, and so she doesn't want to go to school. She says to her mother, "I'm sick". Her mother takes her temperature, and it turns out, to Katerina's surprise, that she really is sick with a fever. Later in the day Katerina develops the flu.

5- Sam is invited to dinner at his boss's house. After a dismal evening enjoyed by no one, Sam says to his hostess, "Thanks, it was a terrific party." Sam doesn't believe it was a terrific party, and he really isn't trying to convince anyone he had a good time but is just concerned about saying something nice to his boss's wife, regardless of the fact that he doesn't expect her to believe it.

6- Peter and Johana have recently started going out together. Valentino is Johana's ex-boyfriend. One evening Peter asks Johana, "Have you seen Valentino this week?" Johana answers, "Valentino's been sick for the past two weeks". Valentino has in fact been sick for the past two weeks, but it is also the case that Johana saw him in a date the night before.

7- Two patients are waiting to be wheeled into the operating room for surgery. The doctor points to one and says, "Is Jones here the patient with the broken leg or the one with the broken arm?" Nurse Braine has just read the files. Although she is anxious to keep her job, she has nevertheless confused the charts in her mind and replies, "He is the one with the broken leg", when in fact Jones is the one with a broken arm.

8- Jason has tickets for the championship game and is very proud of them. He shows the tickets to his boss, who says, "Listen, Jason, any day you don't come to work, you better have a better excuse than that". Jason says, "I will". On the day of the game, Jason calls in and says, "I can't come to work today, Boss, because I'm sick". Ironically, Jason doesn't get to go to the game because the slight stomachache he felt after waking up turns out to be food poisoning. So, Jason was really sick when he said he was.

Box 2.2: Full scenarios

3. RESULTS

The first approach for the analysis of the data was done by aggregated the values of scenarios for each country. For brevity, we will use "falsity" to refer that "the content of the statement (p) is false". We will call "belief" to refer to the fact that "S believes p is false". And we will use "intent" to refer to "S intends to deceive A by assuring that p".

3.1. Aggregated effects

We analyzed the data using a Bayesian ordered logistic regression with the three underlying factors of the construct as fixed factors, and with random intercepts and slopes for participant and population. The posterior distributions of the parameter effects on the DV, lying attribution, are shown in Figure 2.1, L-Panel. Note that the interactions were not analyzed because the goal was to compare which factor most contributed to the concept of lying, and interactions render such comparisons difficult to interpret.

The results of the aggregated data (i.e., including all populations) suggest that intent has a predominant effect over falsity and falsity over beliefs. The median estimates were 1.73 for intent [90 % HDI = 1.32, 2.11], 1.44 for falsity [90 % HDI = 1.15, 1.73], and 1.16 for belief [90 % HDI = 0.89, 1.41]. Additionally, the estimates for the three factors are outside the Region of Practical Equivalence (ROPE) [-0.18 to 0.18], and 100% of the distribution of each parameter is greater than zero.

Figure 2.1, R-Panel, plots the posterior distributions of the comparisons between parameter distributions. The plot indicates that the difference between intent and beliefs is larger than the difference between intent and falsity. Additionally, falsity seems to be related similarly to both intent and beliefs.
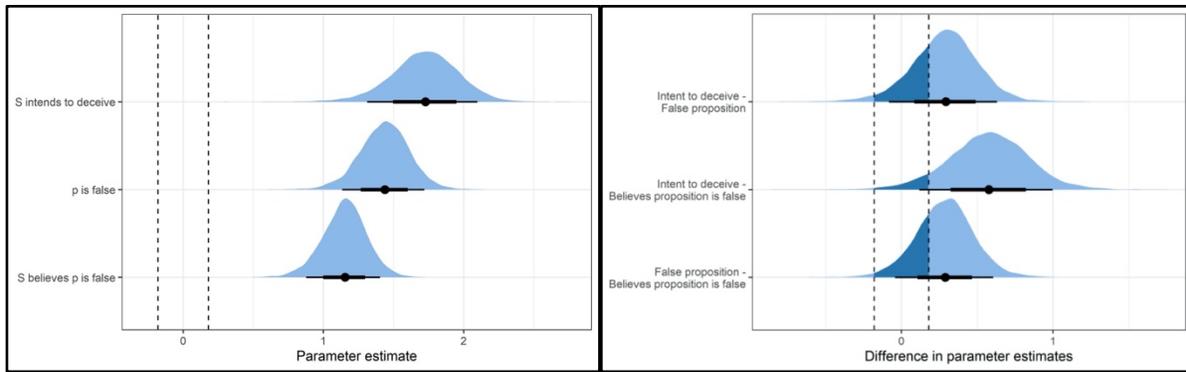
Figure 2.8: Models for "lying" attribution. LEFT - Posterior distribution of each effect. RIGHT - Posterior distribution of the difference in parameter estimates. The dashed line indicates the ROPE, which is the proportion of the posterior in the Region of Practical Equivalence, which is the range of values similar enough to 0 as to be "practically equivalent" to it. When a parameter's distribution is mostly outside of this region, we can conclude there is an effect, while if the distribution is mostly within this region, we can conclude there is no effect. The distribution being partly in and out of the region means we cannot conclude either way. The dashed line indicates the ROPE = -0.18 to 0.18.

We also fitted a Bayesian ordinal logistic regression for the second DV, which captures the moral component of the construct by the participants their agreement with the assertion "the speaker did something bad". Figure 2.2, L-Panel, displays the posterior estimates for the three underlying factors of the construct. Differently than what we found for the construct of lying attribution, the moralization of lying is based mainly on intent [median = 1.63; 90 % HDI = 1.28, 1.99] and falsity [median = 0.80; 90 % HDI = 0.60, 0.99], but not on belief [median = -0.06; 90 % HDI = -0.19, 0.08]. Even when intent is the main component for the negative moral judgment, the speaker's beliefs appear to have no effect on that judgment (with 92.9 % in ROPE and just 22.1 proportion greater than zero), unlike falsity, which is unambiguously relevant. Additionally, Figure 2.2, R-Panel, shows the different distributions of the comparisons between parameter distributions. The fact that the three distributions are outside ROPE, shows that there is a clear effect in the difference between posterior estimates.
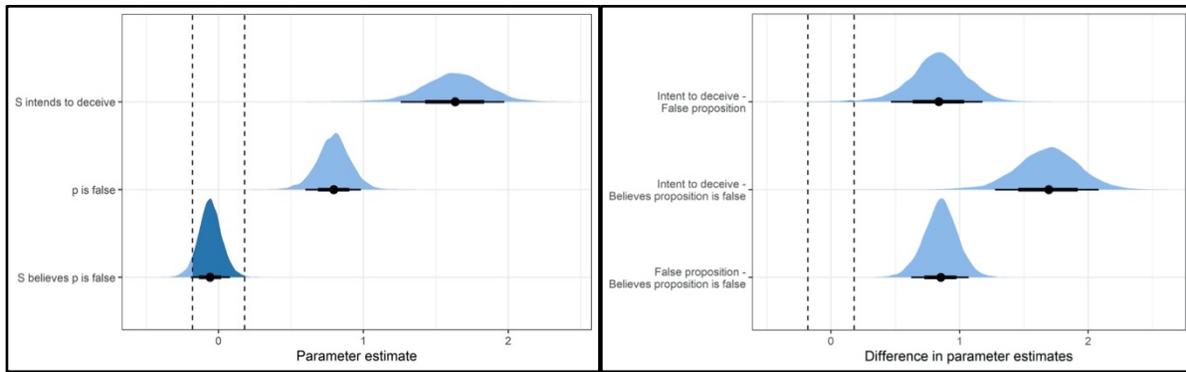
Figure 2.9: Models for "bad" attribution. LEFT - Posterior distribution of each effect. RIGHT - Posterior distribution of the difference in parameter estimates. The dashed line indicates the ROPE, which is the proportion of the posterior in the Region of Practical Equivalence, which is the range of values similar enough to 0 as to be "practically equivalent" to it. When a parameter's distributions mostly out of this region, we can conclude there is an effect, while if the distribution is mostly in this region, we can conclude there is no effect. The distribution being in and out of the region means we cannot conclude either way. The dashed line indicates the ROPE = -0.18 to 0.18.

The third DV for which we fitted a Bayesian ordinal regression was the attribution of insincerity. We thought that this concept would help us to understand the relationship between lying and intent, since while it seems possible to lie without the intention to deceive, it seems harder to conceive insincerity without intentions. Figure 2.3, L-Panel plots the posterior of the three estimates. The values for were higher for intent [median = 2.08; 90 % HDI = 1.67, 2.47], followed by falsity [median = 1.16; 90 % HDI = 0.88, 1.42], and beliefs [median = 0.78; 90 % HDI = *0.55, 102*]. The three distributions have zero percent in ROPE, what highlights their robustness. The difference between estimates plotted in Figure 2.3, R-Panel, suggests that the difference between intent and the other two constructs is larger than the difference between falsity and beliefs. Thus, we can conclude that there is a hierarchical relation among factors, particularly regarding the position of intent.
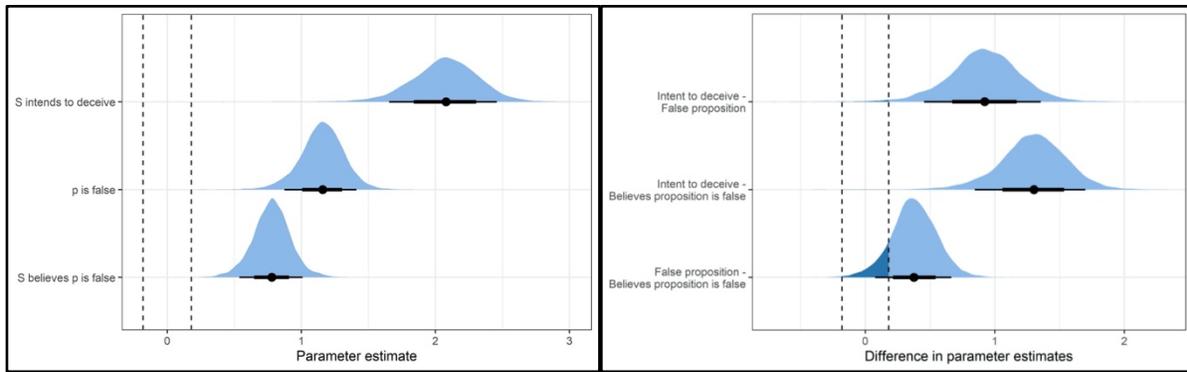
Figure 2.10: Models for "insincerity" attribution. LEFT - Posterior distribution of each effect. RIGHT - Posterior distribution of the difference in parameter estimates. The dashed line indicates the ROPE, which is the proportion of the posterior in the Region of Practical Equivalence, which is the range of values similar enough to 0 as to be "practically equivalent" to it. When a parameter's distributions mostly out of this region, we can conclude there is an effect, while if the distribution is mostly in this region, we can conclude there is no effect. The distribution being in and out of the region means we cannot conclude either way. The dashed line indicates the ROPE = -0.18 to 0.18.

The Bayesian ordinal regression model estimates for the attribution of the "speaker's intention to deceive the addressee" is shown below. Figure 2.4, L-Panel, plots the posterior estimates of the aggregated data for the three factors. As expected, there is a primacy of the factor of intention [median = 2.62; 90 % HDI = 2.07, 3.14], which is not surprising given the DV. But differently to what we found in the attribution of lying, beliefs [median = 0.98; 90 % HDI = 0.76, 1.19] play a larger role than falsity [median = 0.44; 90 % HDI = 0.22, 0.67]. The model also estimates that the posterior distribution for falsity has only 3 percent in ROPE, and zero percent for the other parameters' distributions. Regarding the difference between posteriors, Figure 2.4, R-Panel, shows that the three parameters are strongly differentiated by having no proportions in ROPE, and negative effect between falsity and belief. Thus, beliefs are clearly more relevant for the intentional component of deception than for the construct of lying itself and the hierarchy intent, belief, falsity is robust.
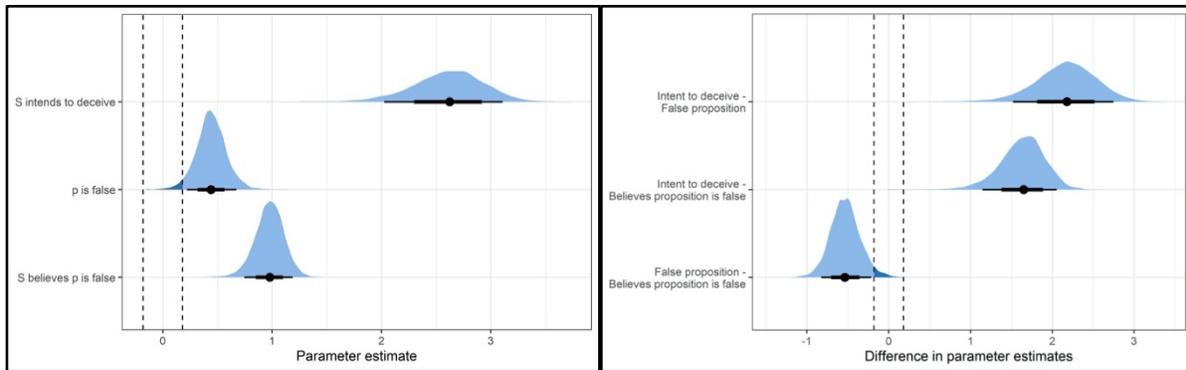
Figure 2.11: models for "speaker's intention to deceive" attribution. LEFT - Posterior distribution of each effect. RIGHT - Posterior distribution of the difference in parameter estimates. The dashed line indicates the ROPE, which is the proportion of the posterior in the Region of Practical Equivalence, which is the range of values similar enough to 0 as to be "practically equivalent" to it. When a parameter's distributions mostly out of this region, we can conclude there is an effect, while if the distribution is mostly in this region, we can conclude there is no effect. The distribution being in and out of the region means we cannot conclude either way. The dashed line indicates the ROPE = -0.18 to 0.18.

Finally, we analyzed the role of the three underlying factors (IVs) regarding the attribution of "telling a lie". The reason to include this DV was to open the possibility to examine "lying" attributions in cases where the intention was not to deceive the addressee. For instance, if John tells Mary, that he is a teacher when he is not (with the intention to deceive her), and then Mary tells Peter that John is a teacher (without intention to deceive Peter since she doesn't know that John was lying to her), Mary may be "telling a lie" but not necessarily "lying". Figure 2.5, L-Panel, shows the result of the aggregated data. We found that differently than in lying attributions, the main factor for "telling a lie" attribution is falsity [median = 1.65; 90 % HDI = 1.36, 1.94], followed by intent [median = 1.53; 90 % HDI = 1.18, 1.84], and beliefs [median = 0.98; 90 % HDI = 0.75, 1.19]. Also, the three parameters have a posterior distribution that is zero percent in ROPE. Interestingly, the difference between posteriors shows that for attributions of telling a lie there is no difference between intent and falsity, but there is a difference between both of them and belief. This shows that "lying" and "telling a lie" do not have the same semantic extension, even when in some languages (e.g., Japanese and Korean) do not make a clear verbal distinction. In the next section, we analyze the variation patterns across populations.
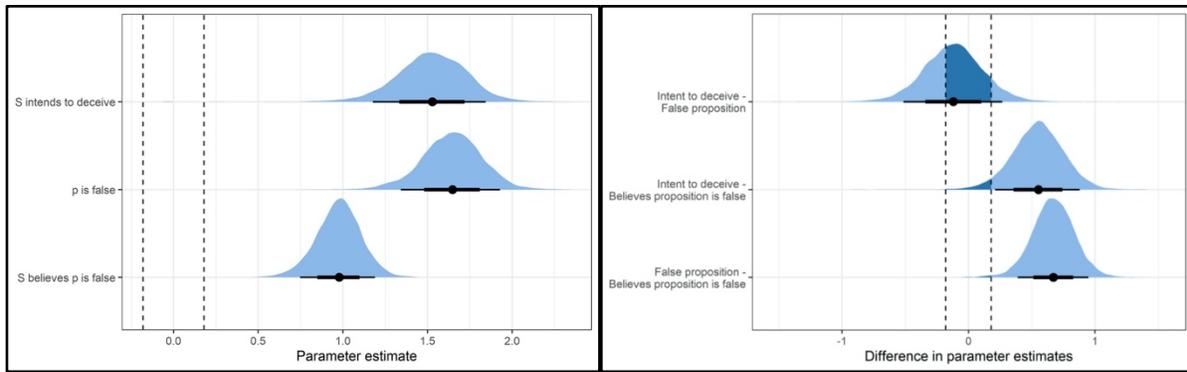
Figure 2.12: models for "telling a lie" attribution. LEFT - Posterior distribution of each effect. RIGHT - Posterior distribution of the difference in parameter estimates. The dashed line indicates the ROPE, which is the proportion of the posterior in the Region of Practical Equivalence, which is the range of values similar enough to 0 as to be "practically equivalent" to it. When a parameter's distributions mostly out of this region, we can conclude there is an effect, while if the distribution is mostly in this region, we can conclude there is no effect. The distribution being in and out of the region means we cannot conclude either way. The dashed line indicates the ROPE = -0.18 to 0.18.

3.2. Variation across populations

In this section, we will discuss the effects across populations. Figure 2.6, L-Panel, shows the parameter estimates in all populations for lying attributions (see SM for median and 90 % HDI). Notably, there is a robust effect for all samples (all parameters are between 99 and 100 out of ROPE) except for Shipibo. As we mentioned, the lack of consistency across tasks in the Shipibo sample could be explained by the difference in modality (the task was traduced from Spanish on the fly), or it can be due to a more general problem on how the task was explained to the subjects and understood by them. The lack of strong effects in Shipibo is extensive to the five DVs, consequently, we will not refer again to them in the analysis. Figure 2.6, R-Panel, plots the difference between parameters. We found different patterns of variation across populations. First, China, Korea, Peru, and USA have parameter estimates that are very close to each other. Second, Morocco and Ukraine, show strong differences among the three parameters. Third, Afrikaans, Ecuador, isiZulu, and Slovak show a strong difference between intent and falsity vs belief.

Additionally, we noted that Japan is the only country in which belief is more relevant to the construct than falsity.
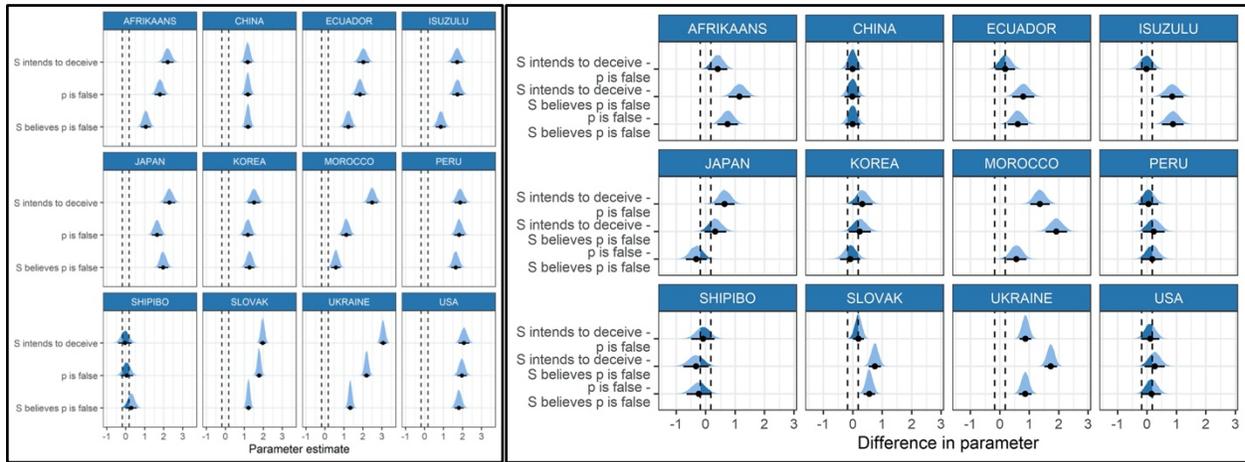
Figure 2.13: Models for "lying attributions. LEFT - Posterior distribution of each effect by population. RIGHT - Posterior distribution of the difference in parameter estimates by population. The dashed line indicates the ROPE, which is the proportion of the posterior in the Region of Practical Equivalence, which is the range of values similar enough to 0 as to be "practically equivalent" to it. When a parameter's distributions mostly out of this region, we can conclude there is an effect, while if the distribution is mostly in this region, we can conclude there is no effect. The distribution being in and out of the region means we cannot conclude either way. The dashed line indicates the ROPE = -0.18 to 0.18.

The attribution of "bad", or the moralization of lying, by population, is shown in Figure 2.7, L-Panel. In this case, the pattern is very robust, with a clear effect on intent, followed by falsity, and no effect on belief. Even this is the case for isiZulu, which is the population with the smallest percentage in ROPE for beliefs [% in ROPE = 9.1]. Additionally, intent and falsity are zero percent ion ROPE for all samples except for Korea where the percentage [% in ROPE = 1.60] is low. Figure 2.7, R-Panel, confirms this strong pattern, showing that all parameters are clearly differentiated in all populations, with a slightly difference in isiZulu, where intent [median = 1.66; 90 % HDI = 1.36, 1.93] and falsity [median = 1.34; 90 % HDI = 1.07, 1.59] are closer.
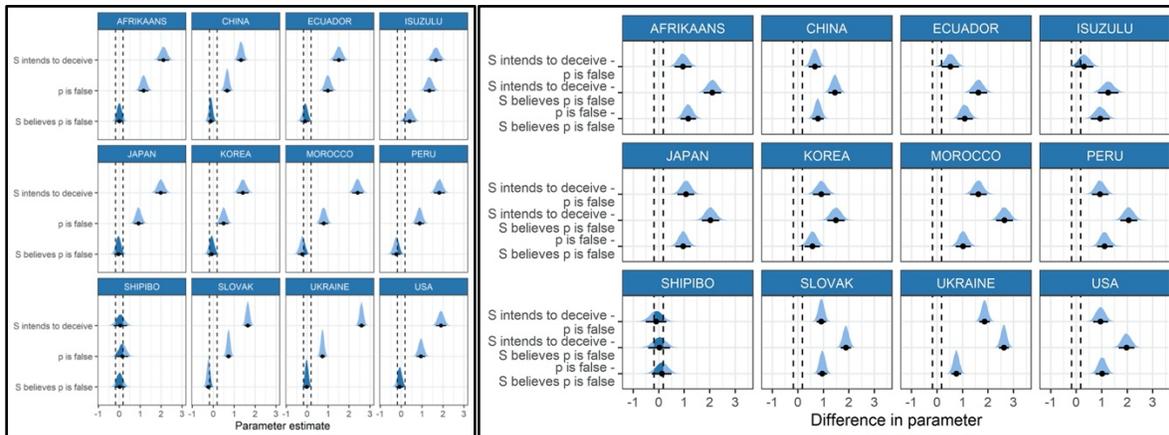
Figure 2.14: Models for "bad" attribution. LEFT - Posterior distribution of each effect by population. RIGHT - Posterior distribution of the difference in parameter estimates by population. The dashed line indicates the ROPE, which is the proportion of the posterior in the Region of Practical Equivalence, which is the range of values similar enough to 0 as to be "practically equivalent" to it. When a parameter's distributions mostly out of this region, we can conclude there is an effect, while if the distribution is mostly in this region, we can conclude there is no effect. The distribution being in and out of the region means we cannot conclude either way. The dashed line indicates the ROPE = -0.18 to 0.18.

Figure 2.8, L-Panel, shows the posterior distributions by population for the attribution of "insincerity". Here we found a robust effect in most populations. While nine out of twelve populations follow the pattern intent>falsity>belief, USA shows a different one where intent is followed by belief and then falsity. All these effects are < 1 % in ROPE except for beliefs and falsity in Japan which has 6.7 and 1 percent in ROPE respectively. Regarding the difference between parameters estimates the effect is clear for intention and falsity in all cases except isiZulu and Ecuador, and less robust for the difference between falsity and beliefs with China, Japan, Korea, Peru, and the USA with high proportions of the distributions in ROPE (see Figure 2.6, R-Panel).
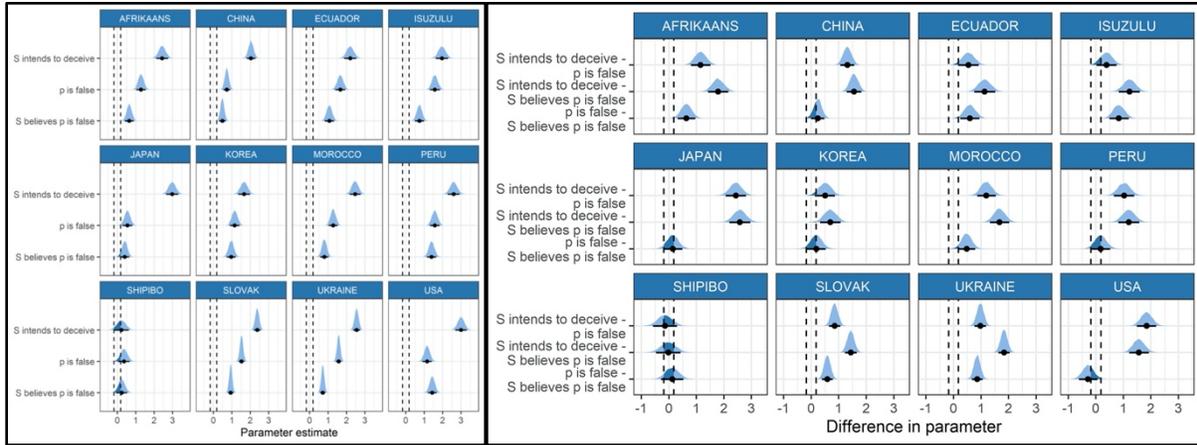
Figure 2.15: Models for "insincere" attribution. LEFT - Posterior distribution of each effect by population. RIGHT - Posterior distribution of the difference in parameter estimates by population. The dashed line indicates the ROPE, which is the proportion of the posterior in the Region of Practical Equivalence, which is the range of values similar enough to 0 as to be "practically equivalent" to it. When a parameter's distributions mostly out of this region, we can conclude there is an effect, while if the distribution is mostly in this region, we can conclude there is no effect. The distribution being in and out of the region means we cannot conclude either way. The dashed line indicates the ROPE = -0.18 to 0.18.

We also analyzed the variation across populations for the "speaker's intent to deceive" attribution. Figure 2.9, L-Panel, plots the posterior distributions by population. There are three interesting patterns here. First, all samples show the order intent>belief> falsity except isiZulu, in which falsity [median = 1.22; 90 % HDI = 0.94, 1.51] has a higher median estimate than belief [median = 1.02; 90 % HDI = 0.76, 1.28]. Second, there is a subset of populations in which the effect is robust for the three parameters. Those are all except Japan, Korea, Morocco, Peru, and USA for which the percentage in ROPE > 1 is for falsity. Third, while the difference among estimates is strong in most cases (Figure 2.9, R-Panel), a subset of populations comprised of Afrikaans, China, isiZulu, and Korea, shows a less robust difference between falsity and beliefs.
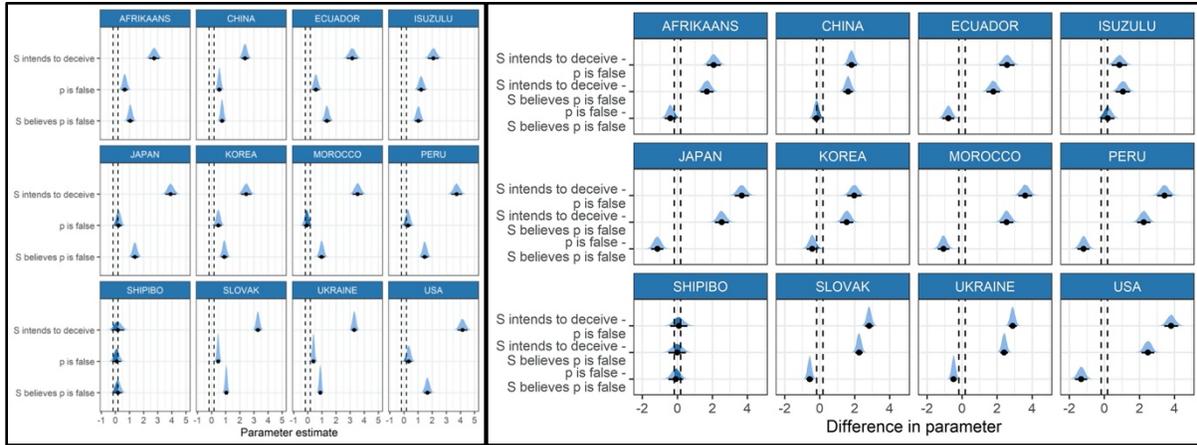
Figure 2.16: Models for "speaker's intent to deceive" attribution. LEFT - Posterior distribution of each effect by population. RIGHT - Posterior distribution of the difference in parameter estimates by population. The dashed line indicates the ROPE, which is the proportion of the posterior in the Region of Practical Equivalence, which is the range of values similar enough to 0 as to be "practically equivalent" to it. When a parameter's distributions mostly out of this region, we can conclude there is an effect, while if the distribution is mostly in this region, we can conclude there is no effect. The distribution being in and out of the region means we cannot conclude either way. The dashed line indicates the ROPE = -0.18 to 0.18.

Figure 2.10, L-Panel, plots the posterior distributions for each factor by population for "telling a lie" attribution. All parameters show a strong effect having zero percentage in ROPE. Interestingly, except for Afrikaans, Morocco, Ukraine, and USA (for which all in intent>falsity>belief) populations attribute the higher role to falsity. Additionally, Slovak and Ukraine show the strongest difference between parameters (Figure 2.10, R-Panel).
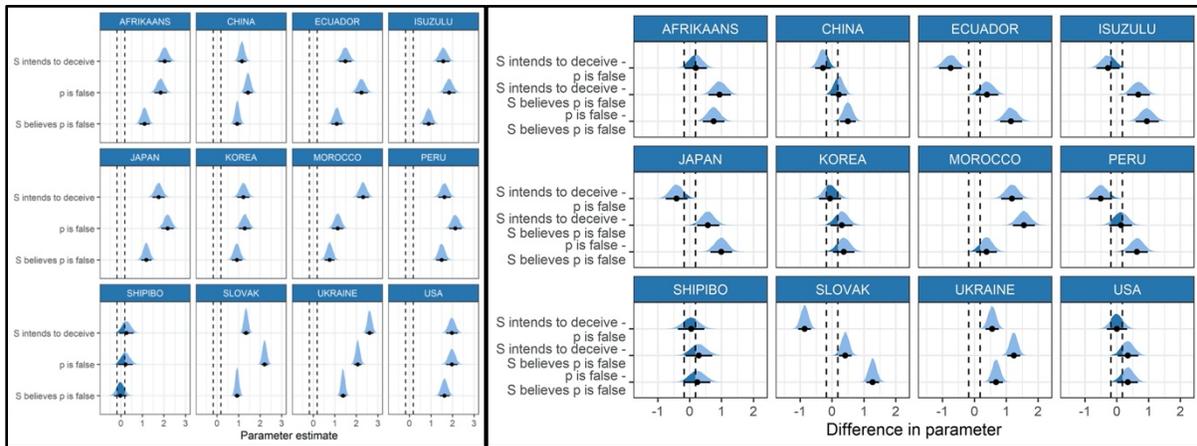
Figure 2.17: Models for "telling a lie" attribution. LEFT - Posterior distribution of each effect by population. RIGHT - Posterior distribution of the difference in parameter estimates by population. The dashed line indicates the ROPE, which is the proportion of the posterior in the Region of Practical Equivalence, which is the range of values similar enough to 0 as to be "practically equivalent" to it. When a parameter's distributions mostly out of this region, we can conclude there is an effect, while if the distribution is mostly in this region, we can conclude there is no effect. The distribution being in and out of the region means we cannot conclude either way. The dashed line indicates the ROPE = -0.18 to 0.18.

DISCUSSION

The first point that we need to address in the discussion is that, notably, we haven't replicated the results of previous studies. This includes the original version of Coleman and Kay (1981) in the US, the Makkan Arabic replication of Cole (1997), the work of Hardin (2010) with Spanish speakers of Ecuador, and the recent study in Indonesia performed by Adha (2020).

Figure 2.11 shows the order of scenarios based on the average agreement with the statement that attributes the speaker to a lying behavior. The main difference between our study and previous ones is that while other authors gave weight to the order of the scenarios, they refrained from performing a statistical significance assessment of the difference between factors – they were merely ranked by order of mean effects. This means that some rank orderings found in that paper might not have been statistically significant.

For instance, Hardin discussed the role of intentions given that in her sample, subjects judged scenario 5 (++-) in the second place in the continuum lying → non-lying, while in Coleman and Key study the second position was for scenario 4 (-++). For Harding, this means that intent (which in scenario 5 is intent [-] vs. intent [+] in scenario 4) was judged to be less relevant for Ecuadorian participants than for US ones. But coming to that conclusion was premature given that the analysis of both studies was only based on the arithmetic mean for each scenario without looking at the robustness of the difference between means (parameters). The fact that scenario 5 appeared before scenario 4 in one sample, is not enough to assert the hierarchy of the underlying factors, since means might not be significantly different (i.e., different above chance). That's why besides identifying the values for each factor by using Bayesian techniques and ordinal logistic regression, we checked for the statistical difference between pairs of parameters. Our results showed an almost identical order of scenarios between the USA and Ecuador (suggesting a case of replication). In addition, the fact that in our study scenario 5 is in second place for both populations, suggests that in Coleman and Kay study, scenario 4 could have been ranked high by chance.
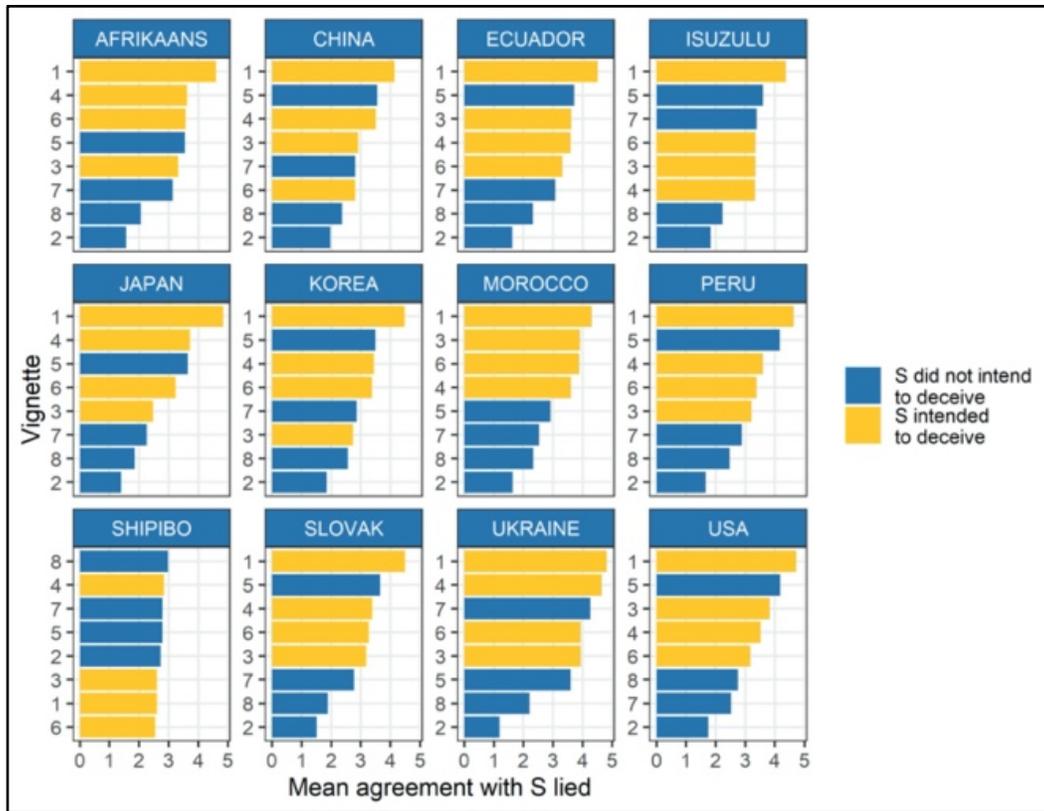
Figure 2.18: Ordered averages of lying attribution by population.

The Bayesian models for our aggregated data showed a robust pattern in which intent, falsity, and beliefs, are part of the conceptual prototype, but the hierarchy between parameters has not the same strength across populations. For instance, there was an agreement across samples (11 out of 11) to rate scenario 1 (+++) as the most prototypical lie, and scenario 2 (---) as the less prototypical. Also, 10 out of 11 samples rated scenario 8 (-+-) next to scenario 2, probably downgrading the effect of beliefs on the prototype. Moreover, scenario 5, which is considered a social (polite) lie in which the speaker does not intend to deceive the addressee, appears in the second position in the continuum (lying → non-lying) in 7 of 11 populations, and is the first scenario with intent [-] that appears for all populations except for Ukraine. This suggests that social lies are highly identified as lies, even when their function is not to deceive the addressee.

The fact that all sampled populations have zero percentage in ROPE signals a robust effect of each parameter for each sample. In other words, neither of the factors is trivial for lying attributions, at least in the contexts of the study design. But even when the prediction that the concept of lying has a prototypical or scalar structure (Chen et al., 2013; Marsili, 2014) holds (Figure 11), the underlying hierarchy of the components that prototype articulates seems to be non-universal and harder to identify in some populations.

Our statistical analysis showed that the underlying hierarchy unfolds according to different cultural instantiations. While some samples, like Morocco and Ukraine, showed a strong difference between pairs of parameter estimates, populations like China, Korea, Peru, and USA established a very close relationship between them, making its hierarchical relationship weak, or null. Other samples occupied an intermediate position (e.g., Afrikaans, Ecuador, isiZulu, Slovak), with some parameters with stronger effects than others. In other words, there is a clear, universal, effect of the three factors when it comes to attributing a prototypical lie, but their hierarchy articulation is null in the second subset of populations, at least when the analysis is restricted to these three factors. We also found that at an aggregated level there is a primacy of intent over falsity and of falsity over belief, but this effect is likely differentially influenced in the aggregate data by countries like Morocco or Ukraine, where the hierarchy was strong. As predicted from the previous literature, the hierarchical structure of the conceptual prototype is instantiated in a different way across societies and languages.

We mentioned in the introduction that several studies found variation in the way people moralize the concept of lying across societies. Based on this antecedent we expected to find at least some degree of variation across populations. However, we found a robust effect that was replicated in 10 out of the 11 surveyed populations, in which intent constitutes the main criteria for the

attribution of a wrong action on the speaker, followed by falsity. The exception was isiZulu where the role of intent was closer to the role of falsity. Additionally, the pattern revealed that beliefs were not considered relevant for the moral judgment of the epistemic harm. Notably, the effect was not just robust for the aggregated data but also for all the surveyed populations individually, *suggesting some universality of this phenomenon*. Additionally, the pattern revealed that beliefs are not considered relevant for moral judgment. The weak effect of beliefs (high percentages in ROPE) might imply that the speaker's mental state is just relevant at the level of the intention when it comes to mitigating (or not) the moral judgment of the epistemic harm. This might imply that the moral condemnation is opaque to the kind of epistemic mental representation that the speaker has regarding the content of the statement; if the intention is clearly deceptive and the content of the statement is false, the negative moral judgment will take place.

When we compared the results for the attribution of lying with the attribution of insincerity and "telling a lie" the results were unpredicted. On the one side, the aggregated data for insincere attributions was more robust in terms of the hierarchy among factors. Particularly strong was the effect of the intent which was robust even in the subsets of populations where the difference between factors was not clear in the case of the later construct, like China, Korea, Peru, and the USA. This shows that the underlying hierarchical pattern for construct insincerity appears to be more general (universal) than the pattern that emerges in the case of lying which showed more variation across populations. In the case of "telling a lie", the aggregated data show not just robust parameters. But differently than what happen with lying attributions where the hierarchy of parameters was weak between populations, for "telling a lie" the primacy intent and falsity over beliefs is supported by the model. But similarly to what we found for the attribution of lying, there was large variation across populations in the way the hierarchy is instantiated at the within

population level. A plausible interpretation of the relationship among the three constructs is that insincerity might be more universal (or more general) than the other two probably because its relationship between the construct and intent is stronger than in the other two. Additionally, while "telling a lie" and "lying" are close in terms of their underlying structure (among and within populations), the role of falsity is stronger in the former.

Finally, in contrast to our findings for "bad" attributions, in which belief was not relevant, for the "speaker's intention to deceive" attributions the three factors were all clearly robust for the aggregated data, with a primacy of belief over falsity, and of intent over belief. This might be the result of the ontological proximity of two constructs since both intent and belief are mental states.

4. CONCLUSION

Our study was the first to examine the prototype structure of the concept of lying using a large cross-cultural sample. Our results showed that the concept is attributed in a scalar way depending on the distribution of the underlying features that philosophers have proposed for lying. Despite finding a robust role of the three parameters that are explored in the literature (i.e., intent, falsity, and belief), we found that the ordering of those parameters is subject to large variation across linguistic and cultural communities. We also found that the moralization of the concept as a function of its underlying features showed very robust results in terms of the ordering of the features and which are relevant. Finally, we found that the attribution of insincerity seems to be more stable across populations than the attribution of lying or "telling a lie". The question of why the concept of lying is instantiated differently across sites remains open, along with the question of whether there are there are pragmatic reasons for the ranking of belief, intent, and falsity and

its variation across populations. Of particular interest would be to design studies that target boundary cases taken from the literature.

CHAPTER 3

EVIDENCE FROM TESTIMONY:

EPISTEMIC STRATEGIES AND DISPUTE RESOLUTION IN WESTERN AMAZONIA

1. INTRODUCTION

Anthropology has paid attention to disputes, conflicts, negotiations, in small-scale societies since its foundation, but the focus of those studies have been more concerned on identifying the rights and obligations of the parties than to the epistemic components that underlie the conflict. With some recent exceptions (e.g., Brenneis (1988); Duranti (1994, 2015); Herzfeld(1988); Boyer (2020)) researchers tangentially addressed, for example, the role of testimony, truth, deception, and lying in the way subjects define the components of the dispute. This is paradoxical given that several of the first armchair anthropologists were well trained in legal theory, and the pervasiveness of social conflict across human societies. And in cases where the authors were experts in legal affairs, like H. Maine, J. Bachofen, and L.H. Morgan, their work was more sensitive to forms of kinship, lineality, and descent, than to the dynamics in which people acquire and negotiate beliefs and consensus. In other words, they were worried about expressing the structure of institutions instead of their unfolding over time and how these institutions shape human communication and notions of truth and evidence.

As Comaroff and Roberts (1981) pointed out, this early work was characterized by an externalist attitude. Similar to the division between formalism and substantivism in economic anthropology, early legal anthropology, also developed by Radcliffe-Brown (1955) can be characterized as a "rule-centered paradigm" (Comaroff & Roberts, 1981, p. 5), in which a legal system, judicial

institutions, and a corpus of law was assumed and projected onto the societies that were the target of the study.

The British functionalists, probably thanks to the application of ethnographic methods, were more sensitive to the subtleties between norms and actual practices –as, for instance, B. Malinowski discussed in "*Crime and Custom in Savage Society*" - or with formalized types of conflict resolution –as in the work of M. Gluckman on African political and legal organization (Gluckman & Moore, 1965). These authors explicitly recognized a legal dimension in small-scale societies, but not by imposing external constructs. Still, this "processual paradigm" (Comaroff & Roberts, 1981, p. 11), given its broad conception of law, had trouble in disentangling the alleged legal dimension from other aspects of the social organization. Malinowski, for example, saw the law as rights and obligations along kinship lines but failed to address the conditions in which these obligations are negotiated or articulated in narratives. In other cases, the analysis of the local disputes and its epistemic consequences was addressed but just tangentially in the context of phenomena like magic (as in Evans Pritchard (1976)), or social drama (as in Victor Turner (1974)).

More recently, the process of conflict and disputes has been addressed by linguistic anthropologists from the point of view of how the narratives and testimonies are organized during the process of negotiation or adjudication. However, most of this work has been dominated by the structure in which the narrative of conflict unfolds from a linguistic or performative perspective (e.g., implicit and explicit metapragmatics (Briggs, 1988), the grammar, turn-taking, and special dispositions (Duranti, 1994), genre (Haviland, 1988), etc.), paying less attention to the ways in which the evidence (e.g., testimony) is pondered.

Before presenting a discussion on the epistemic role of testimony as basis for judgement and action in the context of dispute resolution, I would like to discuss the concept of evidence, in which testimony plays an important part.

2. WAYS OF ADDUCING EVIDENCE

A universal feature of dispute process is that individuals use evidence as a way to build inferences that allow them to arrive at a conclusion that has consequences for the decisions that lead to the resolution of the conflict (Gulliver, 1979). But the concept of legal evidence is not universal since it might change historically and culturally. Moreover, the term "legal", as processual legal anthropology showed, is not adequate to describe a domain which, in some societies, shows a high degree of overlapping with the spheres of social norms, politics, and morality. Consequently, it might not be perceived by the cultural actors as detached from other components of their social life. To avoid a normative-based approach (Comaroff & Roberts, 1981) I will assume here that evidence consists of the elements (material or testimonial) that are presented or produced in a context of conflict and dispute to prove or exculpate the responsibility of someone regarding an accusation of wrongdoing. The technical legal term for this process is called *adducing evidence*. In other words, evidence is what is adduced in a context of dispute to establishing proof by one of the involved parties (Ho, 2015) - context that is located in the continuum that goes from negotiation to adjudication (Gulliver, 1979).

There are at least two kinds of evidence that are commonly used in the context of disputes. The first kind is material evidence. This can be a dead body, DNA, blood, a knife, a bank statement, or even a signature, among a myriad of other material things. The second kind is testimony, and it comprises both expert and witness testimony. Given that material evidence is not always easy to

interpret in terms of its meaning as proof (e.g., there is no witness to provide a testimony that relates the material evidence to the conflict, but there is DNA), courts sometimes make use of forensic or other experts' testimony to provide an adequate interpretation of the material evidence. Sometimes, these experts are even in charge of producing the proof, as in the case of the analysis of a DNA analysis, for instance. Experts, as well as other testifiers, could provide their testimony by the request of any of the involved parties. However, not any type of evidence is always accepted and in some societies this might be governed by norms of exclusion (Ho, 2015). Western legal theory gives a preponderant place to knowledge through the notions of legal material evidence, and expert and witnesses' testimony, but there are pieces of information that are clearly excluded, like gossiping, hearsay, or divination.

But what happened in societies where the scientific method is not used to adduce evidence? In non-Western-based disputes an expert can perform a ritual, magic, or divination to adduce evidence which contrasts with the type of evidence that is adduced in Western legal contexts (Boyer, 2020; Evans-Pritchard, 1976; Shaw, 1991). In Shuar-Achuar societies and many other Amazonian groups, for instance, the role that shamans have in the process of adducing legal evidence is central -where plant-induced visions have predominant role. It is less clear if dreams could serve as legal evidence for Chicham communities, although oneiric experiences are frequently used to base beliefs that are related to the fate of the individual that has the experience.

Additionally, legal evidence carries specific properties. In the first place, there are those characteristics that influence the conditions in which a piece of evidence is considered. One of these properties is relevance. This means that a knife, for instance, could be relevant to adduce evidence if it was somehow connected to the crime scene or the accused, but not if it doesn't. The relevance of the evidence leads to its admissibility. Sometimes a piece of evidence might not be

accepted if it's redundant, or if for instance it was produced by an expert but under suspicion of fraud, or if a biological sample was contaminated by negligence, etc. Besides its admissibility, legal evidence has the property of weight. For instance, a forensic report signed by twenty experts would probably be stronger than a one signed by just two. Or a DNA test would have more weight than an analysis of blood type, just by the fact that the first one is more accurate to identify a specific individual. In conjunction, the relevance, admissibility, and weight of evidence will lead to its probative value (Ho, 2015).

In Chicham communities material evidence is less common since the required expertise is not usually present. In societies where communication is mostly face-to-face, dispute resolution and the associated decision-making process is often characterized as a set of rights and obligations whose breach is usually resolved by the seeking consensus through *negotiation or adjudication, essentially through speech* (Gulliver, 1979). This rarity of material evidence during conflict resolution gives a different connotation to the notion of testimony since it becomes the focus of the entire corpus of proof that parties have available to find a verdict that regulates the decision-making process (e.g., penalty, punishment, victim's compensation (if any), etc.). And arriving at a settlement highly implies evaluating what other people say in the context of their reputation, status, and their hidden or explicit motivations (Roberts, 1979).

All this opens the following research questions. How do people adduce and ponder legal evidence in Chicham communities? How do they negotiate their positions in a context in which the mechanism of resolution at hand (i.e., testimony) might not have the same probative value than material evidence? What kind of evidence is considered admissible and what kind is not? Moreover, what are the criteria that establish the probative value of a piece of evidence?

3. TESTIMONY AND ASSUMPTIONS

In this section, I want to clarify some aspects of the notion of testimony that I used in this chapter. In the first place, while the core of research material gravitated around the use of testimony in a formal context (e.g., a dispute that took place in an *irúntramu* –see below), I also incorporated testimonial pieces of information that apply to non-formal situations as well (e.g., interviews and informal conversations). Therefore, the notion of testimony that I had in mind is a broad one: what is called by Shieber (2015) *natural testimony* in opposition to a formal one.

Second, In the same way that an assertion does not have to be framed by the verb "assert", as in "I assert that x", I assumed that testimony is independent of a specific verb (e.g., "to testify"). Instead, it is the result of the interaction between a testifier and her audience, independently of the felicity conditions (e.g., "I testify that x") (see Duranti, 1986). That's why informal conversations also are including as part of the evidence that clarify the social construction of social truth during the process of dispute (which is not circumscribed to the negotiation and adjudication instance, but to a broader process as Victor Turner showed by the notion of social drama (Turner, 1974)).

Third, philosophical theories of testimony are mostly concerned with the question of how it is possible for a person to acquire beliefs through testimony (Shieber, 2015). While I've been interested in this question, for instance by identifying cases in which someone provided reasons to accept or reject a piece of testimony (i.e., non-presumptivism) versus cases where people used monitoring mechanisms (i.e., presumptivism), I was also concerned about non-individualistic instances of testimony that lead to negotiation, consensus, and adjudication – which is independent of the fact that individual's belief that a piece of testimony as true or not. Actually, given the collective nature of the case that I've analyzed here, and its institutionalized instantiation, most of the time my philosophical position might be closer to a non-individualistic notion of testimony

(Hutchins, 1995; Shieber, 2015). In other words, I assumed the search for consensus through negotiation and adjudication was the result of a collective process (instead of the exclusive assessment of one specific individual) in which several components of the social structure (e.g., reputation, prestige, factions, alliances, historical trajectories, etc.) shape the way in which a socially negotiated "truth" was wrought.

The *case* that I'm going to describe and analyze next spanned eight months. But the meetings that I addressed here were the last two days of negotiation until a solution was reached[?]. However, before presenting the events, I will describe some basic aspects of the life in the village.

4. THE VILLAGE

The site in which this case took place is a small village[4] in the Pastaza basin, in the Pastaza province. The village is comprised of about twenty-five nuclear families that can be grouped in less than four extended families. The social structure of the village was clearly shaped around the family of the couple that came for the first time (I will use "the founders" to refer to that couple). This couple was the union of a member of the Kajuí (the male) with one of the Tsere (the female) family. Thus, the Kajuí is the largest extended family in the village, seconded by the Ampúsek. Other extended families are the Canelos and the Nunink. Almost all the rest of the villagers are married with one member of these three families. However, the social politics is clearly dominated by the Kajuí, among other reasons since this family has the most numerous adult male members of the community. However, while the other families have less members, they form coalitions that have weight in the communitarian decisions.

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[4] I will keep calling it the village instead of its actual name to preserve the privacy of the people involved. Also, names and last names will be changed.

Until 2017 the economy of the village was significantly based on hunting-gathering and horticulture. Even though occasionally people were able to get some cash by working as "*macheteros*" in the fields of communities that were closer to urban centers. There is also a subgroup of people, mostly males and young adults, that migrated temporarily to the city and were able to get some cash or technical knowledge (e.g., construction, military, cooking, etc.). Many Kajuí males were also able to go to the city to study to be a schoolteacher. And all of them are currently employed in the local school and able to get a salary – which implies a clear distinction from those that cannot have regular access to cash. Part of this cash income flows to other community members, usually as contractors (e.g., lumber with chainsaw, building a shelter, or other manual work).

Additionally, regular cash accesses contribute to local inequalities. Teachers usually have bigger houses, sometimes with glass windows and metal roof sheets. They also have better access to technology, e.g., they have cellphones, personal computers, electric generators, etc.—even when there is no phone signal in the area, and satellite internet was available in 2020.

In 2018 the road reached the village. Before that year, the access to the village was only possible by airplane or by half a day's journey of walking through the dense jungle from the last car-accessible community. With the road many locals were employed by the construction companies and immediately the region experienced an economic transformation. Some villagers started to sell wood to merchants that will, usually illegally, trade it in the cities and contributing to deforestation. Women started to sell prepared food next to the road, which was mostly consumed by construction workers and wood traders. And a couple of families started their own shop where locals go to buy canned tuna, dry pasta, beer, soda, soap, toothpaste, chips, cookies, candies, among other basic supplies that do not need refrigeration. In this context, people slowly begun to replace (although

not completely) the traditional practice of hunting and sharing the game, by the practice of selling it. And many collective activities were postponed or deserted to prioritize individual enterprises.

The case that I will discuss here took place during times of transition in which there was a clear intensification in the trajectory that is leading the community to a highly market integrated economy. And the event that initiated the conflict took place during the period in which the road was being build.

5. MECHANISMS OF CONFLICT RESOLUTION

In the *Chicham* cultural tradition there are two main mechanisms to resolve conflicts between community members. On the one hand, there is the "guayusa tea drinking", "guayusa ceremony", or just "guayusa". On the other hand, there are community meetings called *irúntramu* (Spanish: "*asamblea*"). Let's see first how these two mechanisms work.

The guayusa tree (*Ilex guayusa*) is a small tree of the *Aquifoliaceae* family that is typical of the Amazon rainforest. The guayusa is related to other infusion plants of South America like "*yerba mate*" (*Ilex paraguariensis*) mostly consumed in Paraguay, Uruguay, Argentina, and the south of Brazil. One of the main properties of the guayusa is its stimulating capabilities due to its high caffeine content. In the *Chicham* tradition the guayusa is harvested, dried, and then boiled in a big pot for a few minutes. Then it is left to cool down for about five minutes before the host gets a *pilche* of liquid and drinks it or share it with the guest(s). *Pilche* is a small bowl made of clay or dry skin of gourd or calabash tree (*Crescentia cujete*)

The consumption of guayusa usually takes place in the kitchen, next to the fire, right before the dawn. This occasion is used sometimes by elders to guide and instruct the younger members of

the family on important concerns or problems that they might want to get advice for. One of the particularities of the guayusa drinking ritual is that after the ingest of two or three *pilches* the participants walk out of the kitchen and induce vomit with a small branch of "*mama"* (*Manihot esculenta*) with a leaf that is trimmed in the tips and held by the stem. The justification for this practice is that keeping the extract in the stomach might create some discomfort and the stimulation effect would be too strong and to avoid absorbing too much caffeine. My personal experience, however, is that the energizing effect of guayusa is not stronger than a medium size cup of coffee, and less intense that South American *yerba mate*, at least when *mate* is consumed in the traditional way.

When two community members have a conflict or a dispute, - for instance, when a man discovers that his teenage daughter is pregnant and the alleged child's father denies the paternity - the woman's father might (Spanish) "*llamar*" (call, invite) the other man to discuss the issue by drinking guayusa at his place. There is a myriad of ethnographic experiences that I witnessed in which social conflicts were resolved, or at least discussed, over guayusa. Paternity denial is one of the most common disputes, but also conflicts about territorial boundaries, or even drunk fist fights were resolved "in guayusa". However, it is not always possible for the two parties involved to arrive to satisfactory solution. Sometimes, the exchange seems to be irreconcilable at that level, and the "guest" could even reject the invitation. When that's the case, the conflict usually escalates and is resolved in a public meeting: the *irúntramu.*

Irúntramu are public and formal gatherings in which all the register community members (usually individuals that are 17 years, or older) discuss the problems that affect the community (e.g., political decisions that involve the interaction with external parties, like NGOs, Government, other

indigenous communities, etc.), or where community members bring a personal issue or disagreement that was intractable or unresolved at the level of the guayusa ceremony.

The *irúntramu* is frequently very long and takes place in the communal house. Some elected authorities call the village with a sound that is produced by a horn, and the neighbors usually take one or two ours to gather at the communal house. In the meantime, people like to engage in conversation and drink manioc spit beer (*nijiamanch* or *chicha*). These meetings can last for up to twelve hours or more and everybody can raise their hand and speak aloud to the community. Usually, the elected authorities (i.e., president, vice-president, and the secretary) guide the meeting and the speaking turns. When someone decide to speak, they do it for several minutes, but differently than the norm in other cultural and social contexts, the audience make comments in the form of interjections and sometimes they start to talk with people that is next to them without paying attention to the main speaker. This is by no means perceived as disrespectful. One of the few moments of distension is the short breaks that participants take after every two or three hours in which women bring *nijiamanch* to the attendees.

Explicit vote (by raising the hand) in the form of adjudication (by majority and not by unanimity) is used when specific decisions that must be made, but this doesn't mean that everything that is discussed is subject to vote. Many decisions, instead, are discussed and subject to negotiation until a consensus among parties emerges -what usually implied to renounce to a previous position for all or multiple parties (Gulliver, 1979; Roberts, 1979). Another important component is that the *irúntramu* is mandatory, and if one of the community members is not present without good justification (e.g., a health problem) the person is subject to a fine of tens of US dollars. Finally, the resolutions that are made in the *irúntramu* are recorded in a book (Spanish: "*acta*") in which the involved parties and the community authorities rubricate. The *acta* works as an intra-

communitarian official document, and parties might refer to it to support their position from previous resolutions during the negotiation process.

In sum, when two individuals have a conflict that couldn't be resolved in one-on-one guayusa ceremony, they discuss the issue publicly in the *irúntramu*, and the solution is always consensual and negotiated, but not just by the parties involved but by the entire body of the register community members. When the issue at matter is hard to resolve, the meetings are repeated for several days, sometimes in a row, until a form of consensus emerges.

Guayusa tea drinking	Assembly (*irúntramu*)
One-on-one (1:1)	Multiple actors on each side
No mediation	Third party's mediation (but not necessarily adjudication)
No jury	No jury but influential opinions and occasional adjudication by vote
No testimony	Usually with testimony (e.g., witnesses, Shamans, relatives, advocates, etc.)

Table 3.3: Comparative table between two ways of resolving conflicts in Shuar-Achuar communities

In addition to these two traditional ways of resolving disputes, any community member, as an Ecuadorian citizen, can go to a state-based court. However, this is very unlikely, and I know just a few cases in which this situation took place. In the case that I will describe next there were references to a state court and lawyers. But it was mostly used as a strategy (hazard) to leverage the negotiation than an actual action of the parties.

6. THE CASE

Box 3.1 shows a brief schema of the sequence of events that led to what here I called "the case" that I observed during my last visit to the field. It is worth to remark that, at first, I haven't had access to all the details and the chronological order of events. Thus, I reconstructed the timeline by having extensive conversations with the interested parties, as well as other community

members. Tshe information received during these conversations were sometimes fragmentary and even slightly inaccurate. So, I had to ask and re-ask, about the details to disentangle the controversies and the conflict of interest of each actor. In brief, to understand the full case, it was necessary to dig into the subtleties of the social life of the community as well as the complex epistemic exchanges that took place during those days: opinions, lies, truths, accusations, testimonies, negotiation, adjudications, that lead to the reestablishment of the social order.

The origin of the conflict had to do to what is described in of Box 3.1, points 1-4. Julio Kajuí was the president of the community. To become a president (also called Spanish: "*síndico*"; English: "syndic" or "receiver"), the community members must vote. And while the position lasts for two years, a president can be re-elected multiple times. The responsibility of a president is organizing the *irúntramu*, dealing with other community presidents when more than one community wants to organize a join political, ritual, or even recreational action or event, and managing the economic resources of the community when they receive money as part of a contract, donation - or even money that they obtain as fines when someone misses a meeting without an excuse or when someone is punished for breaking some norms. However, being a president does not imply to be a recognized authority. Sometimes presidents are important personalities but in other cases they role is more nominal than a function of their prestige, expertise, and authority.

In his role as president, Julio was able to negotiate a contract with the company that was building the road. The area that I transit as fieldworker is the Pastaza river basin. There are many communities along the river, as well as other rivers that go from northwest to southwest down to the border with Peru. This is the flow of water given the inclination of the terrain from the highland Andes to the lowland Amazon rainforest. The relationship of the Ecuadorian state with the area has a long story and fluctuate by the support that the state historically gave first to missionaries,

1. About 2-3 years ago Julio got a contract to build the portion of the road that was crossing the village. Roberta and Abelardo were hired.
2. According to Abelardo, Julio was going to pay them more than what he finally did, so he claimed him for the right amount.
3. According to Julio, he paid the right amount, but still Abelardo came to argue with him and smacked Julio's *nihamanch pilche* aggressively with his hand and the liquid spilled out on the floor.
4. Julio pushed or punched Abelardo as a response, making him felt on the floor and stopping him from continuing with the fight.
5. By the same time that the problem of Abelardo and Julio took place, Bernardo had a conflict with Rafael (Julio's brother).
6. Both conflicts were discussed in a community meeting and the resolution was that both, Bernardo and Abelardo should be punished for their aggressive misconduct. The punishment consisted in cleaning (with machete) the vegetation of the path that led from the village to Tarimiat (the closest community on the Northwest side of the river).
7. During the same time, Julio's horse died. He said that the horse was on the leash, but "the animal was found dead off the leash, and about 70 meters from the pole it was tied".
8. During the path cleaning, Abelardo and Bernardo talk about their conflicts. According to Bernardo, Abelardo recommended him to do something bad to Rafael: he suggested putting sugar in Rafael's chainsaw and also told (confessed) Bernardo that he was responsible by the death of Julio's horse.
9. About a year or more after these episodes, in November 2018, Bernardo and his wife were fishing (pisciciding) with *barbasco* (*Lonchocarpus urucu*) in a small river that is near the village. Suddenly, they saw that their one-year-old boy was drawing in a water pit. They rescued the child who was looking fine, but when they got back to the house the child started to show symptoms of being poisoned. It was then when they realized that he ingested water that was mixed with *barbasco* while he was trying to survive.
10. Given the child's health condition was turning worse after some hours, they called a plane to bring the child to the city hospital, but he died once arrived at the institution.
11. After this sad and mobilizing event, Bernardo visited a shaman in a near community. According to Bernardo, the shaman said that the baby died as the result of black magic practiced by someone that lived in Bernardo's community. He described the hidden shaman as someone that lived in a house with glass windows, and he mentioned that this person lost a child in the past as the result of his own black magic, among other characteristics.
12. With this information, Bernardo arrived at the conclusion that Abelardo was the referred shaman.
13. Additionally, some months before his child died, Bernardo started an extramarital relationship with Rita an extended member of Julio's family. Rita is a single mother of five children. The last one, according to her, resulted from the extramarital relationship with Bernardo. However, Bernardo never claimed or recognized his paternity.
14. After visiting the shaman, Bernardo told his mother-in-law, Laura (who is also Julio's sister), and his father-in-law, Eduardo, his conjectures about Abelardo. He affirmed to them that Abelardo was a shaman and revealed that once he told him that he had killed Julio's horse.
15. Laura, Bernardo, and Eduardo decided to tell everything to Julio.
16. When Julio was told that Abelardo killed his horse, he called him to have a guayusa ceremony, but Abelardo refused to participate.
17. As the chicham custom stipulates, if someone refuses to discuss a problem on guayusa, the parties might claim their right to treat the issue in a communal meeting. Julio organized, then, the *irúntramu*.
18. The first meeting was around December 2018 and Abelardo rejected the accusation for both shamanism and for killing the horse. But Bernardo ratified it and committed to bring the shaman that told him that Abelardo was a sorcerer. In this meeting, Julio asked for economical compensation and to expel Abelardo from the community.
19. About eight months after, I arrived at the village and the town was in a meeting. They were deciding what to do with Abelardo and how to compensate Julio for the horse. The first day, the problem was not resolved.
20. During the second day of meeting, the community arrived at a solution: Julio was going to accept U$S 1,000 in compensation, but the total amount was not going to be paid by Abelardo alone. Laura, Eduardo, and Bernardo will pay half of that amount. Abelardo paid in cash in front of the community. The other parties were going to pay with work; they committed to build a hut for Julio, probably one that he will use for chickens or for shelter to his electric generator.
21. After these two days of *irúntramu*, I interviewed most adult members of the community about that case.

Box 3.3: Description of events since the end of 2018 until the resolution of the conflict.

second to rubber extractive actors, third to the military (especially after several territorial armed

conflicts with Peru), and more recently through the joint action of the creation of infrastructure

(e.g., roads, schools, health facilities, water, gas, phone, and internet signals, etc.) and oil-based extractive practices. As part of this process the state started building a road to connect the communities of the north side of Pastaza river. The process started about ten years ago and its pace was intermittent; with years of fast development vs inactive years. The road reached the village in 2018. And as it is frequently the case for these communities, the construction companies hire local people for basic jobs; that is, they do not manage trucks or machines, which are domain of outsiders (non-indigenous, *colono*, workers), but they do tasks like open terrain with machete or using other manual tools.

In the case that we are discussing here, Julio got a contract to prepare the terrain for the road and offered some jobs to those community members that were interested in getting some cash. Two of those that wanted to join the road work were Julio's sister, Roberta, and her husband Abelardo. In general, there are a lot of suspicions in Shuar-Achuar communities about the arbitrariness in which presidents manage the community's economic resources. People have no qualm in overtly speaking about their doubts of the discretion of the authorities when it comes to spend community funds. This is the context in which Abelardo considered that Julio was not paying what he said he was going to pay –although maybe he suspected that Julio was paying less that what he already obtained by the contract (this is not clear). According to Abelardo (personal conversation), Julio promised more money. According to Julio (personal conversation), the problem was that he had to dispense the money in multiple payments because that was the way in which he got the funding from the company. As the result of this conflict Abelardo went to Julio's house and confronted him verbally and physically by thwacking his *pilche* of *nihamanch*. Julio returned the action by pushing (or punching) Abelardo, who fell to the floor and then left.

The second series of events are reflected in Box 3.1, points 5-8. After the disagreement between Julio and Abelardo the community had a meeting to decide how to mediate the conflict. Usually, in the *irúntramu* the community discusses several issues during the day, unless a special meeting is set to treat an urgent problem. During that *irúntramu*, the community included in the agenda a conflict that Bernardo, who is married to Julio's niece, had with Rafael, one of Julio's brothers. The event of that conflict was not clear in the testimonies that I got from interviews. Some people argued that there was an issue about a territory limit and others mentioned that was just an aggression from Bernardo while he was drunk. In any case, the content of this conflict is tangential here. The resolution of the *irúntramu* was that Abelardo and Bernardo were punished by a long day of work: they had to clean with machete the trail that goes northwest, upriver, to *Tsach*, a neighboring Shuar community. That day, while working, Abelardo and Bernardo had time to talk about what happened and, according to Bernardo, Abelardo recommended that he put sugar in Rafael's chainsaw to retaliate. And, also according to Bernardo, Abelardo said that he himself retaliated against Julio by poisoning his horse. It was true that Julio's horse was found dead during that time. And according to Julio, he left the horse on the leash, but found him dead about sixty meters from the place the horse was tied. However, this was sometime between 2015 and 2016, and the content of that conversation was not publicly revealed until late 2018.

Around the end of 2018 Bernardo and his wife Raquel went to a small creek that runs at the north of the village to catch some fish. In many Amazonian groups it is common to kill the fish with *barbasco* (*Lonchocarpus urucu*) which is a plant with a hemoglobin-binding poison that asphyxiates the fish and makes them float on the surface (Chagnon, 1983; Davis & Yost, 1983; Johnson, 2003). Although this is not the only way in which *Chicham* groups fish (they also use nets, fishing hooks, bait, and even dynamite), it is probably the most common technique for small

rivers and small fish (Descola, 1994, 1996; Harner, 1984). Also it is the most common technique among women since it can be deployed easily while taking care of children. After Bernardo and Raquel spread the poison in a water pit of the river, they walked a couple of meters up the current and realized that their two-years old felt into the water and was waving his arms to avoid drowning.

They rescued the child and, while at first, he seemed to be fine, started showing symptoms of poisoning after they returned to their house. They called an ambulance plane, and they brought him to hospital at Puyo, but the child did not survive.

For *Chicham* communities, death is usually moralized and considered to be the result of witchcraft, sorcery, or shamanism (Descola, 1996; Harner, 1984). To know who is behind a death, the interested parties must ask an expert: the *uwishint* or shaman (also sorcerer, witchcraft). Thus, Bernardo went to a related village to get help from a shaman. According to Bernardo, the shaman said that there was someone doing black magic in the village, and he provided some clues: he said to Bernardo that the person responsible for his child death had a house with glass windows, he was tall, he had a store, and lost a child as the result of black magic. The only person who fitted the description was Abelardo, who lost his ten-year-old daughter five years before when she was bitten by a scorpion, has a store, glass windows, and is tall for the population average (see Box 3.1, points 9-12).

About a year before the death of the baby, Bernardo started an extramarital relationship with Julio's niece, Rita. Rita is a single mother of five, two of whom are the result of relationships with two different married men of the community. According to Rita the last child was the consequence of an affair with Bernardo, and although she overtly pointed to him as the father, he never recognized the child as his own (see Box 3.1, point 13).

When Bernardo came back to the village from visiting the shaman, he discussed the details with his wife Raquel and her parents Eduardo (father-in-law) and Laura (Julio's sister). What follows is a tricky, and somewhat obscure, point in the story. Bernardo, Eduardo, and Laura decided to tell Julio that Abelardo told Bernardo that he had killed his horse. However, some people suggested (personal interviews) that Bernardo did that to compensate for the fact that he was not taking responsibility for Rita's baby. The argument that Bernardo stated is that he told Julio about the horse as a retaliation to Abelardo for the death of his child. In any case, what once was a secret now virulently revived an old conflict between Julio and Abelardo, with a strong momentum and its peak during my visit to the community (see Box 3.1, points 14-15).

After Julio was informed about the events related to his horse, he invited Abelardo to discuss the issue during *guayusa*, as the *Chicham* tradition stipulates for these circumstances. Given that Abelardo rejected the invitation, Julio (in his role as community president) organized a public meeting to discuss the issue. This first meeting took place in December 2018. According to some testimonies, at that time Bernardo exposed (made?) his accusation, Abelardo denied it, and Julio demanded two things: a) economical compensation, and b) to expel Abelardo from the community.

One problem that arose during that meeting was how to know who was lying and who was telling the truth given that there were no proofs other than Bernardo and Abelardo testimonies. Some people argued that Bernardo lied frequently. Others thought that Abelardo was lying during the meeting. Finally, someone suggested that the only way to know if Bernardo was lying or not is if he brought the shaman to testify in front of the community to establish if Abelardo is a shaman or not and if he killed the horse. Bernardo said he was going to bring the expert, although the cost would be too high (about $500 US dollars) and he was not capable of affording that amount (see Box 3.1, points 16-18).

Many months passed after that first meeting until August 2019 when I arrived during a community crisis. Julio was openly dissatisfied with the course of events, and he was claiming for a high compensation in US dollars and expelling Abelardo from the village. However, many community members thought that expelling Abelardo was an excess of power from Julio, and they voted (32 to 11 against it). Additionally, Abelardo claimed that $3,000 US dollars (this is the amount that Julio asked at the beginning of the negotiation) was more than what he could pay in circumstances in which there was his testimony against the word of Bernardo (a horse cost about $250 US dollars). After two days of long meetings and negotiation they arrived at a resolution. First, Julio accepted a payment of $1,000 US dollars for the horse and the moral damage. Of this amount, Abelardo should pay $500 US dollars and would not be expelled, and Bernardo with the help of Eduardo, and Laura should pay the other $500 US dollars, but given that they were poor they were going to pay Julio by building a small hut (see Box 3.1, points 19-21).

There are many important points to analyze in this case-study, including its resolution, but there are other details that I shall address in the rest of this chapter and present some examples of how the arguments unfolded during the negotiation.

7. THE NEGIOTIATION

In the *irúntramu* value of a testimony is achieved as the result of a social or collective process. Thus, an adequate approach to understand how people negotiate decisions in a context in which the evidence available is testimonial is by analyzing their public narratives. This affirmation does not preclude the fact that individuals apply specific cognitive mechanisms to evaluate the quality of the source and the truth-value if information that is transmitted through testimony, but what is a at the center of a process of consensus is not just the acquisition of beliefs but the social act of

given support or not publicly to other community members. Thus, the first step in my analysis will be to give a description of the social structure in which the principal speakers of the negotiation are embedded and how I think this might influence the way in which the evidence is adduced.

Social structure and the dynamics of the irúntramu

As I explained in the section that described the social structure of the village, besides the fact that political control is decentralized, there is a special influence and authority that the Kajuí family has over the rest of the population. I considered that the main factors that contribute with this centrality are the following:

a) The Kajuí are the descendants of the founder couple that established the community about 45 years ago (see Figure 3.1).

b) Five of the eight siblings of the founder couple are males (Julio, Camilo, Gabino, Jacobo, and Rafael) that established their household in the village; and males are more influential than females regarding political activities (e.g., just a male can be community president).

c) Julio, Camilo, Gabino, Jacobo, and Julio's son, Juan, are the only teachers at the school. Therefore, they have been receiving a salary from the state (sometimes for more than a decade). This means that they were among the few that had regular access to cash flow in the community. There is another teacher, Adalberto Ampúsek, also influential, but he lost his job at the local school and is teaching elsewhere.

d) Until the road arrived, there were no other males with regular access to cash. Consequently, they frequently depended on the contracts that the Kajuí made with them for specific services (e.g., building a shelter, cleaning a field, etc.), or on the contracts that the

community president - usually a Kajuí - made with some external source (e.g., an NGO, missionaries, state representatives, etc.)

Regarding the other people involved in the negotiation, both Abelardo and Bernardo are married with someone who is associated with the Kajuí family. In the case of Abelardo, he is married with Roberta, who is Julio's sister. Roberta is also a daughter of the founders, but as the tradition stipulates, if a woman's father is not alive (as it was here), the groom should ask the bride's brothers to married her. This implies a relationship of respect and obligations between parties that is, however, asymmetrical: Abelardo had to ask Roberta's brothers for her hand.

In the case of Bernardo, the situation is similar. He is married to Julio's niece, the daughter of his sister Laura. In this case, the obligation of respect is more asymmetrical since it implies two generations. Laura is married to Eduardo, who asked Julio and his brothers for her hand. And Bernardo, asked Eduardo. But the fact that both Bernardo and Eduardo live in the community of their wives puts them in a subordinate situation with their wives' relatives.
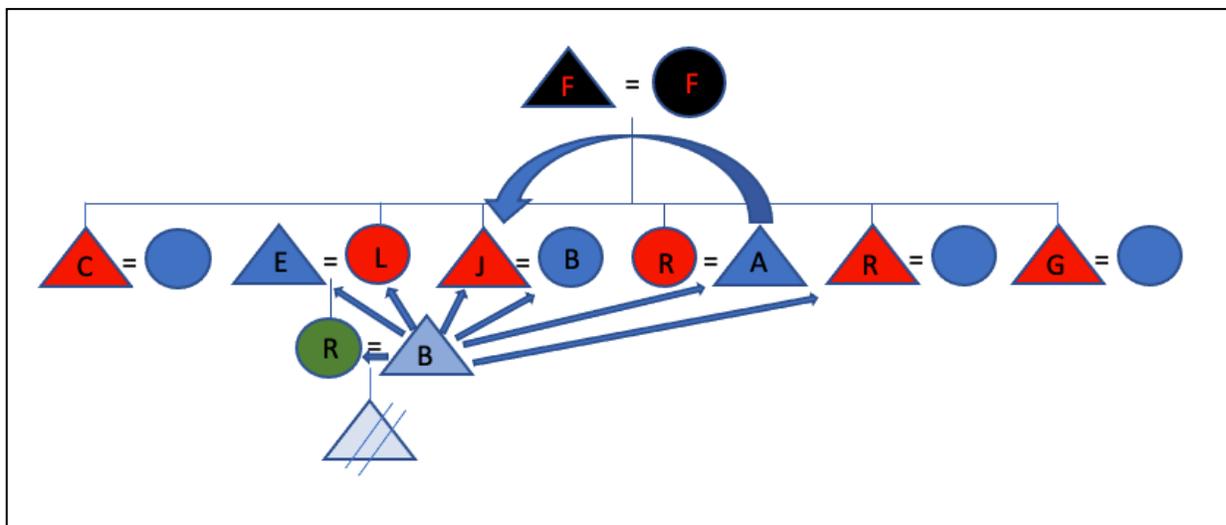
Figure 3.1: Kinship relationships between members involved in the case described in Box 3.1. Straight arrow means conflicts between individuals. Curved arrow represents the central conflict between Julio and Abelardo. Red = Kajuí.

The other main speakers during the *irúntramu* were Camilo and Gabino. They are both sons of the founders, teachers, and Kajuí. In sum, it is in this social asymmetrical framework where the negotiation of consensus trough testimony must be put into context.

Highest probative value: evidence from divination

As mentioned in the introduction, one remarkable difference between legal resolutions in Western or state-based legal systems, and the Chicham context of conflict resolution is the scarcity of material evidence the central role to evidence supported by the expert testimony from a shaman.

In the case that will present here, there was no material evidence[5], instead there was the testimony presented by Bernardo. And by stating that the origin of some of the information presented was given to him by a shaman would be possible that he tried to bestow his testimony with expertise, authority, and strength. According to Bernardo, the shaman mentioned someone that has a) a small business, b) a house with glass windows, c) he was tall, and d) lost a child was doing shamanistic practices in the village. These four characteristics were presented in the *irúntramu* as a proof that Abelardo was responsible for "bad things' in the community. But the interpretation of Bernardo was not enough for everyone (see also next section) and some were explicitly asking to bring a shaman to the *irúntramu* to make sure that Abelardo was the right person that the shaman was indicating.

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[5] It is possible to consider that the death baby and the death horse are material evidence, but they were not presented in the case as such. There was no analysis of the evidence itself –for instance to established if the horse was killed or if it died by natural causes since the events occurred months before.

In Example 1, Beatriz, Julio's wife, also used an alleged shamanistic testimony against Abelardo, to bring an argument of their own on how Julio's health issues (specially diabetes) could be caused by the action of a bad shaman.

EXAMPLE 1

In the following excerpt Beatriz brought her experience with shamans to give weight to the argument in which Julio was being the victim of his brother-in-law –by inference, but not explicitly stated: Abelardo. Additionally, Beatriz brought many arguments that tried to persuade the belief on a shaman's divinations. Here is the passage:

Beatriz:

1. Pamparu tamatai,
    Si te lo hubiera contado un padre de familia,
    If a head of household would tell it to you,

2. amesha nekasaiti tinme.
    dirías que es no es verdad.
    you would say that it is not true.

3. Turak nuu tuu amanumia winia aishur sunkurmatrukmai.
    En esa discrepancia mi esposo se enfermó.
    In [during] this discrepancy [conflict] my husband got sick.

4. Apachka diabetes tuiniawai.
    Los médicos dicen que es diabetes.
    The medical doctors say that it is diabetes.

5. Atum yachitiram atumi unuitiamkamarme.
    A ustedes que son los hermanos les dio la educación.
    He gave education to you, who are his siblings.

6. Urutia ¿aniasrum wekasarum?
    Ustedes, ¿cuándo lo llevaron a un chequeo médico?
    When did you bring him to the doctor for examination?

7. ¿Urutia wekatustai tarumek?
   ¿Cuándo lo piensan piensan llevar?
   When are you planning to bring him?

8. ¡Tatsurme!
   ¡No dicen nada!
   You don't say anything!

9. Wiki japikni, utkini.
   Yo mismo ando jalando, llorando.
   I, myself, have to be pulling him, crying.

10. Aishrun ajakrachiatan wekaweajai.
    Como que hubiera muerto mi esposo.
    It is like my husband had die.

11. Tuma wekasant uunta chichament timiaju nekayatant,
    Sabiendo, conociendo la misma palabra de Dios,
    Knowing the very God's word,

12. antuku ayatant ya maikia crea ajajai.
    ahora he vuelto creer en la brujería.
    now I started to believe again in witchcraft.

13. Amesha jakmeka, atumsha jakrumka.
    Ustedes también cuando se enojan, o se enferman, podrian creer en eso.
    You also could believe in that when you get mad or sick.

14. Nuka enentaimratin jearme.
    En esta vida sabemos morir con una enfermedad.
    In this life, we know that we will die by a desease.

15. Juu nunkanmaka mash aniashka sunkurmakar jakar.
    A la enfermedad los medicamentos la curan.
    Medicines cure desease.

16. Ii aparinkai waitias jakamiayi.
    Nuestro Padre murió sacrificando.
    Our Lord died trough sacrifice.

17. Waitsar jakrisha sunkurjai jakartiniutji,
    Si nos sacrificamos, y morimos por una enfermedad,
    If we sacrifice, and are dying because of disease,

18. sunkurnaka tsuak niaiktatui.
    podemos ser sanados con medicamentos.
    we can be cured with medicines.

19. Urutmash wekasajai hospital,
    Demasiado he andado en hospital,
    I had been too much at the hospital,

20. tsuaknaka chaka, chaka, atash shaant kuja ainiayatan,
    y aunque toma los medicamentos, como el pollo traga el maíz,
    and although I take medicines as a chicken eats corn,

21. urutaisha apashka glucosa tuiniana nuu tarachai,
    nada le ha bajado lo que los médicos le llaman la glucosa.
    it has not decreased what the doctors call glucose.

22. "¿Yaiti?" – timia.
    "¿Quien?" – dijo.
    "Who?" - he said. [she is referring to a shaman]

23. "¿Yajai manikiuitiam…katsumnaikiaitiam, jianaikiuitiam?"
    "¿Con quien has peleado…has peleado, discutido?"
    "With whom have you fought…have fought, argued?"

24. "Nuke utsutramkaiti timiayi, gasta ajapujut, gasta ajapujut.
    "Él mismo ha ido con el brujo para el hechizo, para que estés gastando toda la vida su plata".
    "He [the client of a the shaman] went to a sorcerer to do a sorcery, to making you spend all your [Julio's] money throughout your life"

25. "Ameka aini pujut timiaitme" – timiayi.
    "Así te ha hecho" – dijo.
    "That's how he [the bad person] did" – he [the shaman] said.

26. Kuranderonmash wemajai nurant ajakui.
    Cuando seguía muy grave me fui en el curandero.

When he was still serously ill, I went to see the *curandero* [Spanish for shaman].

27. Kankajint tamp<u>e</u>maki, natsamtainmasha.
Tenia amortiguación en los pies, en los genitales.
His [Julio's] feet and genitals were numb.

28. Nuisha w<u>e</u>majai.
Ahí también me fui.
I also went [to the shaman].

29. Waritia nunash nunisant chikicha.
Nuevamente me fui en otro curandero y lo mismo dijo.
Then I went to another and he said the same.

30. F.sha nush aintsan timiayi, nuk<u>ete</u> am<u>e</u> sa<u>e</u>mkiaja,
Igual F., dijo que su cuñado mismo es.
The same with F. [a renowned shaman], *who said that it is you brother-in-law*.

31. "Waichashit! Waichashit!" - timiajai.
'¡Mentira! ¡Mentira!" – dijimos.
"Lie! Lie!" – we said.

32. Yamaikia j<u>e</u>akai iista uwishint yamaikia:
Pero ahora llego lo que el curandero dijo:
But now it came [happened] what the *curandero* said: [she is referring to the conflict between Julio and Abelardo]

33. iniamkartuk dos noches winia aishur maikia kanar tsawar pujawai.
antes no podía dormir, y hoy dos días amaneció durmiendo mi esposo.
my husband was not able to sleep before, but he has been sleeping [well] the last two nights.

34. ¡Nua am<u>e</u>sh ainiakm<u>e</u>ka!
¡Mira usted también si te suceden esas cosas!
Watch if these things happen to you as well! [to the audience]

35. Yushuar akum<u>e</u>sh nuka crea ajasminiaiti.
Podrías creer, aunque fueras Cristiano.
You might believe, even if you are Christian.

36. Wish aintsan yamaikia pujajai.

Yo también igual ahora.
I also [believe] now.

37. Tuma asamtai wikia, tuu amataish, uunta chicham<u>e</u>nt antuku asant,
Por eso yo digo, aunque las cosas son así, yo como he escuchado la palabra de Dios,
That's why I say, although the things are like this, as I heard the word of God,

38. winia aishur takuinkia, iwiarnarmi, tura ukunam tuka achati.
a mi esposo digo, que solucionemos, y que en el futuro no vuelva suceder.
I ask my husband that we have to find a solution, and that it has not to happen again in the future.

39. Yamaikia p<u>e</u>nk<u>e</u>r pujusartai nuamtaik asar.
Ahora vivamos bien como familias.
Let's live well as families.

40. Wari urukamtain kaj<u>e</u>rnaitiaj?
¿Porque vamos a enojarnos?
Why are we going to get mad?

41. ¿Ii manikaitiaj?
¿Acaso nosotros solemos pelear?
Do we often fight?

42. Mania pujusar, iwiarashrisha arum kiarai.
Si estamos peleando, no vamos solucionar.
If we are fighting we are not going to solve [it].

43. ¿Wari yamai tuw<u>e</u>naij, tsawarum<u>e</u>k, winiajai?
¿Cómo vamos a decir, buenas días, como estas?
How are we going to say good morning, how are you?

EXAMPLE 2

During the first day of meeting many voices raised that the only way to know if there was a "bad" shaman in the community was bringing a "good" shaman, making him to drink ayahuasca, and asking him about the hidden malefactor. Bernardo agreed to do that, although the cost was about $500 US dollars, and he never did it. Here is an example of Adalberto Ampúsek, a respected elder

and teacher, bringing the issue and explaining how this method of inquiry was effective in other community from the, East, in the Achuar territory:

Adalberto:

1. Nuik iruntrar chichakur, juu chicham akui chichakur…
   Antes en la reunion dijimos, ya que había este problema dijimos…
   In a previous meeting, given that there was this problem, we said…

2. junis amai, kuit apujnasti, timia abogadochuitkiush chichamant nakuikiarainia <u>au</u>…
   así era, vamos poner dinero, luego traemos un abogado experto en la hablar y discutir…
   we are going to put some money, then we will bring a lawyer who is an expert in speaking, arguing…

3. turamtai nuu uwishint experto itiar.
   dijimos de traer un chamán experto.
   we said we will bring an expert shaman.

4. N<u>e</u>kasaiti takui iwiarar.
   Si dice que es verdad solucionemos.
   If he said it's true [the accusation against Abelardo], let's solve it.

5. P<u>e</u>nk<u>e</u>r uw<u>e</u>j sunaisar pujustai,
   Démonos las manos y vivamos bien.
   Let's shake our hands and live well.

6. Timia chicham, nuu umintkiachuiti.
   Pero lo que dijimos, eso no se ha cumplido.
   But what we said, has not been fullfilled.

7. Turakui yusa <u>e</u>n<u>e</u>ntaimtayatan tajai: <u>ne</u>kask<u>e</u>ka ley timei, w<u>e</u>akm<u>e</u>sh kuitcha ajapatam<u>e</u>.
   Aunque soy Cristiano digo: la realidad es que si te vas en la ley, también vas gastar dinero.
   Although I'm Christian, I say: it is a fact that if you go to the law [state court], you will also spend money.

8. Abelardoha ajapatawai, Pápesh ajapatawai.
   Abelardo va gastar, Pápe va gastar.
   Abelardo is going to spend, Pápe [Bernardo] is going to spend.

9. Testigos artatui, nuka itiurchatchakai,
   Tambien a haber testigos, eso es problema,
   There are also going to be witnesses [Spanish: *testigos*], that's a problem.

10. Tura yusa narijai yushuar ayatnak,
    Con el nombre de Jesus, aún siendo Cristiano,

And in the name of Jesus, still being Cristian,

11. comprueba nuchak atsawai tunatsuk,
    como se dice que no hay prueba,
    as it is said that there is no proof,

12. tuma asamtai n<u>e</u>kanat tusar nuu tiarmayi,
    cómo es así para conocer la verdad,
    as it is needed to know the truth,

13. nuka yamai nuu amunkachu asamtai,
    y como no se termina las acusaciones,
    and as the accusations are not ending,

14. arantakur resolucion arma amataish,
    respetando aun que la resolucion estaba escrita,
    being respectful that the resolution was already written,

15. tunataik akarma ainiawai,
    nuevamente quedamos,
    we agreed again,

16. <u>au,</u> yamaram "kuitian $500 wii apujsatjai timei".
    no sé quien dijo "yo voy poner dinero los $500 dólares".
    I don't know who said "I'm gonna pay $500 US dollars".

17. Yatsuk timia,
    Mi hermano dijo,
    My brother [Bernardo] said,

18. Apusatjai kuitin tura uw<u>i</u>shint akiktai turar n<u>e</u>katai
    Con eso vamos pagar al chamán y vamos conocer la verdad,
    With that we will pay the shamanan and we will know the truth.

19. nuka tirichua ukukmiaj, nuu uminkiachai,
    Dijimos eso, pero no se cumplió.
    We said that, but it was not fulfilled.

20. Nuu urukamtai n<u>e</u>kask<u>e</u>ka turar yatsurua amukar mak<u>ete</u> chichamniait.
    Eso es lo mejor que podemos hacer hermanos para terminar esta dicusion
    That's the best thing we can do brothers to end this discussion

21. Yau winia achuar, nanmaya W. shuar ii sa<u>e</u> ainiawai, ii yachi:
    Ayer me dijo a mi un Achuar, de familia W., nuestro hermano:
    Yesterday an Achuar told me, someone from W. family, our brother:

22. wari turutmia junisar ii iruntrar am<u>e</u>tm<u>e</u> tamasha atsa,
    asi como aquí, en una reunion se acusaba a un señor,
    just like here, in a meeting someone was being accused

23. atsajai wichaitjai aja puja,
    pero se negaba hasta lo último.
    but he was denying until the end.

24. Uwishint achuar nunkania
     Por eso llamaron a un buen chamán de la misma zona Achuar
    That's why they called a shaman from the very Achuar area.

25. Auskaitia tachamaitiat p<u>e</u>nk<u>e</u>r uwishniuiti tama n<u>e</u>kakir untsukar itiar irunturar nat<u>e</u>m arar.
    Se reunieron e hicieron tomar ayawaska, y le pidieron que diga quien era.
    They met and made him drink ayahuasca, and they asked him to say who was [the bad shaman].

26. (Am<u>e</u>k<u>e</u>tm<u>e</u>) "Aintsun yanak titi tusar imia ajarint" – am<u>e</u>k<u>e</u>tm<u>e</u>.
    (Dijo)"¡Tú mismo eres! – dijo.
    (He [the shaman] said) "you are! – he said.

27. "Am<u>e</u>chua juka magia n<u>e</u>kam uukar uwishniuitm<u>e</u>ja".
    "Tú conoces magia y brujeria".
    "You know magic and witchcraft".

28. "Timiaju a<u>e</u>nts maitm<u>e</u>".
    "Tu has matado a una persona con brujeria".
    "You have killed a person with witchcraft".

29. Nuu ajakmararu kaj<u>e</u>kar, síndico dos dias tiempo suajai warik ukupkata,
    Luego, los familiares del difunto le pidieron al presidente de la comunidad para que le expulse dentro de dos días.
    Then, the family of the deceased asked the community president to expell the person in two days.

30. "Tuu tiri M. C. jiki akupkamu sa<u>e</u>ru juni Mantuin <u>e</u>k<u>e</u>t<u>e</u>awai tamant antajai.
    "Y así expoulsamos a M. C. con nuestra familia" […]
    "So, that's how they expelled M. C. with our family" […] [the family refers to the person that was telling the story, not Adalberto]

31. Tuu iwiaraniajai sa<u>e</u>ru tusa winia aujtukmiayi yau.
    "Asi solucionamos" - me dijo estando de paso ayer.
    "That's how we solve it" – he said while passing by yesterday.

32. Tuma asamtai uwishniush.
    Es asi hay algunos chamánes.

That's how it is, there are some shamans.

33. Chikishkia - ukunmaka jint apatiat n<u>e</u>kausha,
    Aunque algún día van a estar en el infierno la verdad - dicen.
    Although they will be in hell – they [people] say.

34. N<u>e</u>kamniush tikishka waitrincha irunui.
    Otros existen mentirosos.
    There are others [persons] that are liars.

35. Tuma asamtai urukaimtai nuu itiar uunta mesa directiva,
    Por eso, lo mejor es si lo podemos traer -les digo Mesa Directiva.
    That's why, *the best is if we can bring one* – I tell you, authorities.

36. nuk<u>e</u>sh tuu takakmasar n<u>e</u>kask<u>e</u>ka n<u>e</u>kar ankant ukunaikchaintjik,
    Aunque sea eso podemos hacer y de esta manera saber la verdad para librarnos.
    At least that we can do to get the truth and be free.

Examples 1 and 2, and other references not shown here, indicate that there was an agreement that a shaman's testimony have the highest probative value in these circumstances. Nobody objected to these interventions during the meetings. Additionally, there was an attempt to persuade the audience about a previous shamanistic prognosis to explain Julio's illness and malfortune. The illness was presented by Beatriz (and by Adalberto, although not transcribed here) as signs of a witchcraft practices against Julio.

EXAMPLE 3

After the dispute was resolved, I came with the question if considering that a direct testimony from a shaman had similar probative value to an expert analysis of material evidence in a Western based court. An afternoon, and during an informal conversation, I asked Camilo about this point. Here there is the transcribed extract of our talk:

Camilo:
1. Para juzgar a una persona, primero tienes que comprobarlo.
    To judge someone, first you must prove it.

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2. Eso es lo que yo siempre hable. Mil veces repetí, varias veces.
   That's what I always talked about. I repeated it a thousand times, many times.

Alejandro:
3. ¿Y como se podría comprobar un hecho de este tipo aquí?
   And how could a fact of this type be verified here?

Camilo:
4. Bueno…
   Well…

Alejandro:
5. Digamos, sin una policía científica.
   I mean, without scientific police.

6. Por que, por ejemplo, la policía en la ciudad... la policía científica busca huellas, cosas así.
   Because, for instance, the police in the city…the scientific police look for fingerprints, and things like that.

7. Pero aquí no hay mecanismos [de esos aquí]…entonces como se prueban las cosas.
   But here there not mechanisms [of those here] …so how it is possible to prove things.

Camilo:
8. Yo para una comprobación dije: bajo nuestra cultura y nuestra…
   To have a verification, I said: under our culture and our…

9. bueno no es tanto…también la creencia.
   well not that much…also our belief.

10. Traer a un chamán experto a decir si es lo cierto que el señor ha hecho.
    Bringing an expert shaman to make him say if it is true that such Mr. [Abelardo] had done it.

11. Pero, o sea, hay unos chamanes que si adivinan.
    But, I mean, there are shamans that can do divination.

12. Y decir que "sí, es así".
    And [they can] say, "yes, this is how it is".

13. Bueno, tampoco mandarle por siempre, de vida, a que se vaya. Sino corregirle. […]
    Well, but not to send him [Abelardo] forever, for life, to get out [of the community]. But to correct him[…].

Alejandro:

14. Entonces, ¿la manera de establecer que algo es exacto, de establecer evidencia, sería por medio de un chaman?
Thus, the way to establish that something is accurate [precise, exact], of establishing evidence, would be through a shaman?

Camilo:
15. Sí.
Yes.

Penker pujustin and dark truth: shared blame

One of the things that struck me the most regarding the resolution of the conflict was the fact that Bernardo had to pay half of the horse's value. On the one hand, it seemed true that Bernardo brought the issue of the horse killing without a proof other than his plain testimony – which was released years after he got the information. Moreover, although it was considered by some (e.g., two of Julio's brothers) as a piece of evidence with low probative value, most people had no mentions toward its inadmissibility, and just one person (Camilo) was explicit about this by appealing to Bernardo's trustworthiness showing his non-presumptivism. However, without an eyewitness or a shaman, plain testimony is how usually parties adduce evidence in these legal conflicts, and the admissibility of Bernardo's testimony was strategically used during the negotiation.

Probably due to a combination of his subordinate position in the social structure and to the fact that he has conflicts opened in many flanks (see arrows in figure 3.2) – what affected his competence as a source (personal interviews) - his testimony was put into question in multiple instances by Julio's brothers. For example, by Camilo who had an exchange in the second day of negotiation with Bernardo and his wife Raquel in which he said in public accused Bernardo of being a liar.

EXAMPLE 4

Camilo:

1. "Ame mayitm<u>e</u> tiar".
   "Tu has dicho que has matado".
   "You have said you killed". [Cristobal refers to what Bernardo said to Abelardo]

2. "Nui sentenciaciarmiayi" -timia<u>i</u>.
   "Ahí le sentenciaron" – dijo.
   "There he [Abelardo] was sentenced" – he [Abelardo] said.

3. "Aantsank jui turatniuna nuka uwishint iitiar comprobajasta<u>i</u>" - tama ama<u>i</u>
   "Lo que hay que hacer es traer a un chamán y hacer comprobación" – decían.
   "What must be done is to bring a shaman and do a verification" – people said.

4. Uuu umikchawiitrum<u>e</u> nuna takunt, taja<u>i</u> acta najanamua nuka nunis chichasma…
   Pero eso no se cumplio, les digo, por eso en la acta también lo que han hablado…
   But this was not fulfilled, I tell you [to the audience], and that's why that had been written in the books..

5. acuerdo najanamu comprobajakch<u>e</u>trume, nuna yaush, timiaja<u>i</u>.
   el acuerdo lo han hecho, pero no se hizo comprobación - eso ayer también les dije.
   the agreement was done, but proof was not done – I told you that yesterday. [to the audience]

6. Turam atakka turutmiarm<u>e</u> ayamrakrum tarum<u>e</u>,
   Pero después me dijeron que le estoy defendiendo.
   But you said that I was advocating for him [Abelardo].

7. Ayamraknaka tatsuja<u>i</u> warii a<u>i</u>nis chichakma actanam aw<u>ai</u>,
   No le estoy defendiendo, pero eso es lo que hemos conversado en el acta.
   I'm not advocating for him, but that's what we discussed in the books.

8. N<u>e</u>kasnak tajaa naa socios anaa nua.
   Sí les digo la verdad socios.
   I'm telling you the truth, partners [he refers to the community members].

9. N<u>e</u>kasnak taja, ¿o nankamniak wiki iinintimsant? - taja
   Sí digo la verdad, ¿o les estoy diciendo en vano? - les digo.
   I'm telling the truth, ¿or I'm saying this to you without justification? – I tells you [to the audience].

10. Atsa junis actanam a<u>u</u> asamta<u>i</u> taja<u>i</u>, n<u>e</u>kasainti nunaka tura a<u>e</u>tsanak timiaja<u>i</u> n<u>e</u>kas análisis.
    Como ya está en el acta y en análisis también esta bien claro.
    As it is in the books, and the analysis is also clear.

11. Juu antuktarum:
    Escuchen esto:
    Listen:

12. wii yamaram ame juarkim titi̱a takumniaka umpa ne̱kas eje̱turetjiarme̱.
    yo si empiezo de cero y si es de investigar de verdad los puedo conocer.
    I start from the beginning, and if it is necessary to investigate the truth, I can know them [liars].

13. ¡Ne̱kastaja̱i!
    ¡Sí digo verdad!
    I'm telling the truth!

14. Juush itiur problemasha winimi̱a yamaikia uno por uno, nui ke̱rakrumka atak urukataj.
    Hemos discutido el problema pero, ahora uno por uno, debemos saber las causas de donde salió.
    We had discussed the problem but, one by one, we need to know the causes where it [the issue] came from.

15. ¿Urukataj?
    ¿Qué hago?
    What do I do?

16. ¡Ne̱kasant tajarme̱!
    ¡Les digo la verdad!
    I'm telling you the truth!

17. ¿Itiur itiurchatcha jush winimi̱a?
    ¿Cómo vino este problema?
    How did the problem arise?

18. ¿Urukamta̱i eṯse̱rkashmam?
    ¿Por qué no avisaste rápido?
    Why you didn't tell about it quickly? [to Bernardo]

19. ¿Warii itiurunt asame̱a winishmam?
    ¿Por que no viniste?
    Why did you not come? [to tell]

20. Nui nuyanka itiurchatka winiaw̱ai, ¿antukurme̱k?
    De ahí viene problema, ¿escucharon?
    There is where the problem comes from, did you listen? [to the audience]

21. Nuu a̱int tusant wikia warik iwiarnarti nuja̱in, timi̱ajrume̱.
    Para que no haya este problema es que debemos de solucionar rápido - les dije.
    To avoid that problem, lets solve it quickly - I said. [to the audience]

22. ¿Antukurmek? Warii wii nekachuntka antuktarum juu iwiarat tusar anujturku asakrumint.
    ¿Escucharon? Si yo no hubiera sabido, pero como ya se a notado el tema, por eso les digo.
    Did you listen? [to the audience] If I hadn't known (maybe I didn't know?), but as the
    problem now is evident, that's why I told you this. [to the audience]

23. Análisis de problemátikaksha ikiurtumai ajakuitrume.
    Me hubieran dejado el análisis de la problemática.
    You should have let me analyse the problem.

24. Turakrumniaka nekasa nuna titiniujai: ¿antukurmek Pápewa?
    Si me hubieran dejado, la verdad les hubiara dicho: ¿me escucho Pápe?
    If you have had let me [analyse] I would told you the truth [to the audience]: did you listen
    Pápe? [to Bernardo]

25. Nekas ejetuktiniatjame wikia tura aentsanak tuwemajai weitia nunaka ejekatniutjai,
    De verdad tengo que investigar yo. Por eso les he dicho, a los mentirosos tengo investigar
    y conocer.
    The truth is that I have to investigate. That's why I told you [to the audience], I have to
    know and investigate the liars.

26. Wijiankia yash uwemratin jeatsui chichiwiutjai.
    Y seguro conmigo nadie puede escapar.
    And for sure that nobody can run away with me.

After this strong intervention, Raquel, Bernardo's wife decides to answer…

Raquel
27. ¡Ejetukiama yaasha!
    ¡Ya pues investiga!
    Investigate, then!

28. ¡Antram chichauweam!
    ¡De gana sabes hablar!
    You talk without any justification!

And then Bernardo…

Bernardo
29. Yanka yamarmantmania juarkitiai!
    Ya, entonces empiece desde principio!
    So, start from the begining!

30. [in Spanish] Cómo fue ahí. ¡Voy avisar todo, y ahí me van creer!
    As it was [the facts], I will tell everything, and you will believe me!

Critobal intervened again and pointed again to Bernardo's reputation as a liar.

Camilo
    31. ¡Nekasampitia!
       ¡Es verdad!
       It is true!

    32. Antukumek porque wikia amint wetrumniaka neka asant tajai.
       Sí escuchaste porque yo a ti ya te conozco tus mentiras, por eso te digo.
       Yes you have listen, because I know your lies, that's why I'm telling you this. [to Bernardo]

    33. Tura junash sindiconcha timiajai tuna weitriniait.
       Y este problema ya le avisé al Sindico y le dije que suele mentir.
       And I've told the syndic [Julio] about this issue, and I told him that he [Bernardo] lies often.

    34. Nekajai timiajai uuknaka wikia chichachuitjia.
       Dije que sé todas las mentiras de él, por eso sé todas las cosas como mayor.
       I said that I know all his lies, that's why I know all the things, as an elder.

Bernardo
    35. Nekayatmesha yasha, ¡ukuktia mentiranam entonces!.
       Si es que sabes, ¡deja como mentira, entonces!
       If you know, then let it as a lie!

Additionally, during my interviews a few people mentioned that Bernardo was not trustable for different reasons, although not necessarily for being a liar (e.g., he had fist fights frequently –I even witnessed one three years ago). But paradoxically, the same people agreed during the interview that it was highly plausible that Abelardo killed the horse. Thus, the fact that Bernardo was blamed when there are good reasons to believe that he was saying the truth is slightly counterintuitive - unless one considers that he failed to adduce evidence by bringing a shaman. But the victim, in this case Julio, did not put into question the testimony of Bernardo. Instead, he posited him as an ally during the negotiation and complained to those that ask to bring a shaman to proof Abelardo's culpability. Example 5 gather some of these dialogs.

EXAMPLE 5

This is a fragment between Julio and his brother Camilo:

Julio

1. Niniak tajai, niniak nanmash tajai, niniak, acusajajai, mawititiatjai.
   A él mismo digo, a él mismo le estoy acusando: ¡ha matado! - digo.
   I'm telling him [Abelardo], I'm accusing him: he has killed! - I say.

Cristóbal

2. Mawititin, es un crimen ante asamblea.
   Decir ha matado, es un crimen ante la asamblea.
   To say that he has killed is a crime in the *asamblea* [meeting].

Julio

3. ¡Mawiti! Es que testigojai, testigojai tajai. yo tengo testigo - turakun tajai.
   ¡El es un asesino! Es que con testigo digo. Yo tengo testigo -por eso digo.
   He is a killer! *I said that with a witness. I have a witness* -that's why I say this.

Cristóbal

4. [Spanish] ¡Tampoco el testigo no (sic) ha comprobado!
5. *But the witness has not verified!*

Later that day Julio received the opposition of other brothers, like Jacobo.

Jacobo

1. Wisha titiajna,
   Yo también digo,
   I also say,

2. Sindico tana nuna pueblotikia completo rechazo,
   lo que dice el Síndico el pueblo da total rechazo.
   that what the syndic [President] is saying has the rejection of the community.

3. Wari akuish como testigo,
   En cualquier caso, debe haber testigos.
   In any case, there should be a witness.

Julio brought his argument again…

Julio

1. Juinkia pasee antukaiti.
   Aquí se ha escuchado la novedad de él.
   We heard the news from him [Bernardo].

2. Wii testigo takakea asaant, maak pujureant wainkiachuitjai,
   Yo como tengo testigo, aunque no haya visto matar al animal,
   As I have a witness, although he [Bernardo] hasn't seen when the animal was killed,

3. turaitkiuish, nii wenuijain tiniuiti, wii mamjai tiniukiti.
   pero con su misma propia boca ha dicho.
   but with his own mouth he [Abelardo] has said.

4. "Wii mamjai" - tiniukiti,
   "Yo mate" - ha dicho.
   "I killed" – he [Abelardo] has said.

At the next day…

Julio
1. Wikia yamaikia sindico winint afectado asakui.
   Yo como soy afectado como Síndico digo, que mi caballo no hay que matar.
   As I'm the victim, as the president I say, that my horse should not be killed.

2. Winia kaweir mashminiaiti jakatniunt nakitniuti shuaretkiunka,
   Él también aunque sea animal a mi caballo no le gusta morir, peor si fuera una persona,
   My horse although is an animal, my horse does not like to die, it would be even worse if he were a person.

3. Nekasapi tura nuna mamjai tiniu asamtai,
   Es verdad, como a dicho, que a matado.
   It is true, as he said, he has killed.

4. Testigo takakunt,
   Como tengo testigo,
   As I have a witness,

5. ujakma ausamu asamtai tu planteajai nuiti,
   que me a conversado por eso estoy planteando esto.
   that told me this, that's why I'm bringing the issue.

6. Tura atumsha mash mayoría tarume weitiati.
   Ustedes también todos la mayoría dicen que es mentira.
   You [to the audience] the majority say that it is a lie.

7. Comprueba wii mamjai tiri ujakma etsereawai nuiti.
   Comprueba es lo que a dicho que "he matado".
   Verifying is that he has said that he [Abelardo] has *killed.*

8. Tura apachnaka jaka tsak ijiu nekasank mamaa nuiti.
   Esa persona que avisa, eso es.
   That person [the witness] that is testifying, that is [verifying].

Finally, there is an intervention of Gabino.

Gabino

    1. Comprovatsjichuam taji, Julio, ¡nuu amesha antukia!,
       Decimos que no está comprobado, Julio. ¡Tu también escucha!
       We are saying that it is not verified, Julio. You also listen!

Julio

    2. kame comprueva awai waitiatkiuish, testigo awai
       Bueno, ¡hay comprueba! Aunque sea mentira, hay testigo.
       Ok, there is proof! Although it could be a lie, there is a witness.

This last commentary of Julio is noteworthy since it seems that he appealed to the fact of having a witness as a reason to adducing evidence, even when there was a possibility in which the witness could lying, according to him, the doubts are not enough to consider the inadmissibility of the evidence.

But what was the argument to make Bernardo accountable? I think a that the answer is in one of the passages in which Camilo said to Bernardo that

    a) he took too long to bring the issue – remember that some people suspect that this was a strategic action to compensate the denial of his paternity, and

    b) his testimony unveiled a problematic truth – what I called "dark truth" - since it was the spark that initiated a community conflict that lasted for eight months, interrupting the good life (*penker pujustin).*

Example 6 shows a conversation that took place during the conflict between Camilo and Bernardo.

EXAMPLE 6

Camilo

    1. Pápe, jumchik titiajai neskas, enentaimsar.
       Pápe, te voy a decir algo, pensando bien.
       Pápe [Bernardo], I'm going to tell you something.

2. Antukta, umpa kaj<u>e</u>ak tatai turutirap,
   Escuche, y no pienses que te lo digo enojado.
   Listen, and don't think that I'm saying this while being angry.

3. Nekas chichamsha warik <u>etse</u>rkasminium<u>e</u>a sea waitiniaji,
   No es eso. Porque no has avisado rápido este asunto,
   It is not that. Because you had not talked about this issue fast [faster enough],

4. tura <u>ene</u>ntaimsar k<u>e</u>raknaka wikish titint j<u>e</u>ajai yatsuru:
   ahora estamos peleando, por eso, como quiero vivir con todos, podrías decir:
   now we are fighting, so, as I want to live with all of you, you could say:

5. "ayu mash pujusarmi p<u>e</u>nk<u>e</u>r,
   "para vivir todos bien,
   "to live well [*pujusarmi p<u>e</u>nk<u>e</u>r*] among us,

6. pueblo, apujsar akikmakartai nunash titintniash.
   pueblo, pongamos todo y paguemos.
   community, let's put everything [$1,000 dollars] and let's pay.

7. <u>Ene</u>ntaincha takak<u>e</u>ajai urukamtainia chicham jinkimiu wii a<u>ii</u> ikiuktin nakitiakunt nunaka, titintniash j<u>e</u>ajai".
   Tengo idea de decirles, porque yo no quiero dejar este asunto sin arreglar por eso puedo decir eso, les digo".
   I have the idea of telling you, because I don't want to let this issue unresolved, that's why I say this".

8. N<u>e</u>kasampi turakunt naa uumpar Bernardo tajai,
   Es verdad lo que le digo a Bernardo,
   It is true what I'm saying to Bernardo,

9. Aminia chichamka uumpa jinkiwuiti nuu n<u>e</u>kaska…
   que tú as contado este problema…
   that you have talk about this problem…

10. wankari <u>etse</u>rkamuntmania nuu maj yamai pujaji,
    al resto de las personas ya como ya salio de boca de usted por eso ahora estamos peleando entre hermanos.
    to the rest of the people, *as it came from your mouth, that's why we are fighting between siblings*.

11. Uumpa n<u>e</u>kasa nuna wish a<u>e</u>nts iwiaku,
    Ya sé que algún día yo también puedo mentir.
    I know that someday I also could lie.

12. Turakunt wikia juna tajarm<u>e</u> chicha pujuchmi.
    Por eso ahora les digo, para no estar con este asunto.
    That's why I tell you right now that to finish the issue.

13. Antukta, n<u>e</u>kasa nuna titiatjai,
    Ascuchen, le voy decir lo que es verdad:
    Listen [to the audience], I'm going to say what it is true:

14. yatsur Bernardo, akikmaktai uumpa wari nuna atumint,
    ahora Bernardo, como as mentido debes pagar, eso también puedo decir.
    now Bernardo, as you have lied you should pay, that is something that I can also say.

15. Winia a<u>e</u>ntsrutirmint nuu itiurchatant j<u>e</u>nkerant winia yatsuru,
    Por eso yo no quiero meter en problemas a los otros hermanos.
    That's why I don't want to put other siblings in trouble.

16. S<u>e</u>ru itiurchatjai iniaij winia yatsurjai nujaj pujui tusant p<u>e</u>nk<u>e</u> asumruchuitjai,
    No quiero que mi cuñado y mi hermano estén con problemas, eso sí no quiero.
    I don't want that my brother-in-law and my brother were in trouble, I don't want that.

17. Tsankurturtarum uchirunt nuu <u>e</u>n<u>e</u>ntai <u>e</u>k<u>e</u>tkaant ikiurkitniunt nakitiajai,
    Por eso yo no quiero dejar esto sin solucionar, y dejar metiendo malas ideas a mi hijo, eso
    yo no quiero.
    That's why I don't want to let this unresolve, and transmitting bad ideas to my son, I don't
    want that.

18. Umitmakchatiatant secretario aarta yo me comprometo con Pápe no se arum turutti,
     Aunque no ha cometido, les digo, como yo secretario me comprometo con Pápe y que
    después que me diga…
    Although he had not done it [Abelardo], I tell you [audience], as a secretary I commit with
    Pápe and later he can tell me…

19. no se arum turutti, irurant akikmaktajai 1,000 dólar akikmatai,
     y que después me diga que juntando $1,000 dólares paguemos,
    and later he will tell me, that gathering, $1,000 US dollars we can pay,

20. nujai amukati nuna s<u>e</u>gajrum<u>e</u>,
    y con eso terminemos eso les pido.
    and with that I ask you to end it [the conflict].

21. Nunianka chichakchamu ati,
    De ahí que no haya mas intervención,
    From there on, there will not be more intervention.

22. Ayatik Pápe ninki turutti wii tajana nuna wari tawak:
    Solo que Pápe que me responda:

Just [want] that Pápe answer to me:

23. "Ajape, ajape apujsar uumpa amukati".
    "Que paguemos la mitad, la mitad y ya que termine".
    "I pay half, the half and it is over".

24. Nunianka chichakchami uumpa,
    Y de ahí ya no hablemos mas hermano.
    After that we don't talk [about the issue] anymore.

The answer of Bernardo was the following:

Bernardo
1. Ayu mata, imsaya tsankuramujai wii titiajai:
   Ya vera, con respeto voy a decir:
   Well, I will say with respect:

2. wii waitra aintsant juwajai, pero yo seguramente estoy seguro.
   yo como que miente me quedo, pero yo seguramente estoy seguro.
   I will look as the one that lied, but I'm completely sure.

3. Porque el señor me aviso ya nuwiti,
   Porque el señor me avisó, ya eso es.
   Because the Sr. [Abelardo] told me, that's what it is.

4. Pero wii warik eso rato avise a mi suegra pero mi suegra no aviso ese rato.
   Pero yo eso rato avise a mi suegra pero mi suegra no aviso ese rato.
   But I told my mother-in-law [Laura] but she didn't tell [about] that. [he means here that
   she didn't spread the news until later]

5. Tío Abelardo yamaikia amesh uunt asam tiorutme,
   Tío Abelardo ya tu también como eres mayor es mi tío,
   Uncle Abelardo, you now as an elder too,

6. muchos cosas amijiai wekasawitji,
   muchos cosas con usted andando hemos conversado,
   many things we have been talking about,

7. tura wii yajauchi nuna ausachuitjame pero tú tampoco yajaucha nuu aujtuschaitme.
   pero yo no te he conversado de malas y pero tu tampoco no me has conversado.
   but I haven't told you things with bad intention and you haven't either.

8. Bero sí me dijiste eso.
   Pero si me dijiste eso.
   But you told me that.

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9. Uumpa karinje itiurchatjai pujumja nui turutmiame.
   Cuando tuve aquel problema me dijiste.
   When I had a problem [with Rafael], you told me [to Abelardo].

10. Maaj turutint asakmint tajame, pero me rechazas todo mentira,
    Te digo porque me dijiste, pero me rechazas todo mentira.
    I'm telling you this because you told me, but you reject everything as it were a lie.

11. Pero wikia juna salida suakunt tajai: $500 susati tura wii uumpantka wii kame…
    Pero yo para dar salida digo: $500 que le de…
    But to find a solution I say: $500 [US dollars] that I can gave him [Julio]…

12. para quedarme bueno, jeant jearkatjai wii aunt ashirant aunak ese porte jearkatjai nui.
    para quedarme bueno, le voy hacer casade ese porte (…).
    to end as a good person, I'm going to build a house of this size (…).

13. $500 wii jeant jearkatjai eso es todo.
    Yo con $500 le voy hacer casa y eso es todo.
    With $500 [US dollars] I'm going to build a house and that's it.

As it is clear from the passages Bernardo's testimony came to interrupt the "good way of life" of the community, and in consequence, he was considered also responsible of the restoration of the *penker pujustin*. The idea of "good life" is one of the most important values that Shuar people associate with morality and Shuar knowledge in general. In a recent forthcoming interview about knowledge and wisdom that I and a group of colleagues did on southern indigenous epistemologies, we found that the role of *penker pujustin* as the right way to live with others in peace and respect, is central to the notions of cultural values that elders considered to be critical to transmit to future generations.

Probable culpability and it's mechanisms

Another interesting component of the negotiation was that, at least in this community (but I believe that this is the case in many societies), there was not an explicit principle of innocence. In many instances of the negotiation speakers put pressure on Abelardo to recognize that he killed the horse, but he always denied it. He barely spoke during the event and kept most of the time siting in a bench and looking to the floor. Thus, the problem of the probative value of the proof (due to its weakness) became evident in many discussions. This was probably, an opportunity for Abelardo, who used the absence of shamanistic

testimony as a leverage to diminish the sanction (e.g., to avoid being expelled from the village or paying more than what he finally did). Examples 7 and 8 show some of these strategies.

EXAMPLE 7

Abelardo
1. Yamaikia yaush <u>eke</u> ek<u>e</u>mkuar maa las dos, numia kintiamramjai. (…)
   Ayer también todo el día sentado desde las dos, se hizo muy tarde. (…)
   Yesterday I was also all day sitting here since two, it got late. (…)

2. Wikia $250 timiajai yamamtaikia,
   Yo primero dije $250 dólares,
   I said $250 US dollars at first,

3. turamaitiatrum atak Juan Kajuí chichak $500 takui.
   pero después Juan Kajuí dijo $500.
   but then Juan Kajuí said $500.

4. Pueblo juakarmai nujai,
   El pueblo quedo con eso.
   The community ratified that.

5. Tura nianka yamai ataksha $500 tarum<u>e</u>,
   Y ahora otra vez dicen $500.
   And now they [the audience] say $500 again.

6. N<u>e</u>kaska pueblo nunaka n<u>e</u>kas nunis.
   Cuando dijo eso el pueblo, con eso me he quedado.
   When the community said that, I accepted.

7. Akikmakta takui ayu tinia juakuitjai,
   Que pague, y acepté.
   To pay, and I accepted.

8. Tura yamaish ataksha nunisrik niu pujumjinia nunisrik w<u>e</u>aji,
   Pero otra vez seguimos con lo de antes, hay mismo seguimos.
   But again, we returned to the previous [disagreement], [and] we are still there.

9. Turakui wikia yamaikia tura aintsank niunchu actash najanamuiti.
   Por eso ahora digo como está hecho en el acta.
   That's why I said now [to do] as it is made [written] in the books.

10. Antsu akirkati actaka ainksha nusha turatai,
    Y de ahí yo no puedo decir que vamos hacer así.

So, I can't say what we are going to do.

11. Nunash antatsjai turaitiat acta yaunch najanamuiti,
Eso yo no puedo decir por que ya esta hecho el acta.
I can't say because the books are already made [written].

12. aya w<u>e</u>ti tusan <u>en</u>entaimtureawai turakui wikia,
Ya solo pienso en irme de aquí, por eso yo,
I just think in leaving from here [the meeting], that's why,

13. <u>e</u>saram chicha pujutsuk,
para no estar alargando el tiempo,
to avoid spending more time,

14. wikia j<u>e</u>atsjai nunaka $1,000 dólar akikmaktiniaka
yo digo que no puedo pagar los $1,000 dólares.
I say that I can't pay $1,000 US dollars.

15. Akikmaktiniaka antsu compruebajainkia nunaka akiktiniaka, j<u>e</u>ajai,
Sin razón; si hubiera comprobación, ahí si podría pagar, les digo.
Without reason [verification]; if there were a verification, I would be able to pay, - I say.

16. Tura sin comprueba no puedo pagar $1,000 dólar
Pero si no hay comprueba no puedo pagar $1,000 dólares
But without verification I can't pay $1,000 dollars.

EXAMPLE 8

Abelardo
1. [Spanish] No puedo.
I can't [pay 1,000 US dollars].

2. Yusash wish wari yus najanamuitjai,
Yo también soy hecho por Jesús,
I'm also made by Jesus,

3. Tura timianun wari pruebajai w<u>e</u>chaitiatan turashminiaitjai.
Pero sin la comprobación no puedo hacer.
But I can't do [pay] without the verification.

4. Tura antsu comproba najatawar n<u>e</u>kasaiti,
Pero si me hacen comprueba y me dicen que si es verdad
But if you [audience] do a verification and tell that it is true

5. nekas nuna uwishniusha jui ekemas nekas junis ninki uwishint asa,
   que soy chamán y así me dice viendo que "tus eres shaman" me dice,
   that I'm a shaman, and if he [the shaman] looking at me tells me "you are a shaman",

6. turuki wininiaiti turuteakuinkia Julio yamai tawai $1,000 dólar turuteana,
   y aquí Julio $1,000 dólar me dice,
   and here Julio asks for $1,000 US dollars,

7. nunaka yamai jui nekas uwishint jui ekemas takuinkia akikiaintjai.
   y ahí si el chamán me dice hay si pagaría.
   if the shaman tells me that [that he is a shaman], I will pay.

8. Turaitiatant jeachjai sin comprueba nu akrumsha titiarum,
   No puedo pagar sin comprueba y cuando escriban en el acta harán así.
   I can't pay without verification, and that's should be written in the books.

9. Sn comprueba Abelardo Aúju jinki weawai.
   Dirán que el señor Abelardo Aúju esta saliendo sin comprobación.
   You will say that Mr. Abelardo Aúju is ending [paying] without verification.

10. ¡Amai juu acta penker najanatarum antsuka nunaka tajai!
    ¡Y que hagan bien el acta!
    And do the books right!

11. [Spanish] ¡Pero firmen ustedes!
    But you should sign! [to the authorities]

12. Atum najanearmena nuu firmastarum!
    ¡Pero que firmen ustedes, los que hacen!
    But you should sign, those that make [write] it! [to the authorities]

Even when several people recognized during the negotiation and in personal interviews that Bernardo's testimony was not having a strong probative value (what is not the same to say that it has not probative value at all), nobody put into question the fact that Abelardo killed the horse. In other words, people considered Abelardo' responsibility probable. The plausibility seemed clear since they asked him to pay even when there was no shamanistic testimony, as in the following example from Juan (Example 9).

EXAMPLE 9

Juan
1. Kame weitnium akikmajai.
   Que pagó en mentira.
   That he [Abelardo] paid in lie.

2. ¿Tuwash atrarat atsa?
   ¿Acaso eso le van a escribir?
   That's what are you going to write for him? [to the authorities]

3. Nekas amunam tsankureamujai wish,
   Que en verdad yo también, con respeto,
   Actually, me too, with respect,

4. reconocimiento susamjai tama nuka atiniait.
   le doy reconocimiento de que eso le van a redactar.
   I give you my word about what is going to be written.

5. Ya, antar takurmeka itiurak, wikia nunaka.
   Ya, y si dicen en vano eso, yo también me siento raro.
   And if they say that is in vain, I also feel strange.

6. Nunaka kunturmachu nekapjai kunturmachu.
   Yo no me siento a gusto con esto.
   I don't feel comfortable with that.

7. Pantek tajai, wish pujaku asant juna susamjai.
   Claro digo, yo también como morador le di esto.
   I say clearly, I also, as a dweller, gave him this.

8. Ya, antrar nuu timianu akikmakar pujuschamniaiti.
   Ya, que "pagando en mentira" no puedo estar.
   So, I can't stay as "paying in lie'.

9. Winiaka nuu enentair awai.
   Eso es lo que hay en mi corazón,
   This is what is in my hearth.

10. Tura asamtai wikia primero nii kerukmari,
    Por eso digo que como él quiso primero,
    That's why I say that as he wanted first [to pay],

11. nii anenkratairi chicham atiniaiti wikia tinia, tajai.
    de su amabilidad debe ser, le digo.
    it must be [done] from his kindness.

12. ¿Chicham akunka nuwaiti, waitnium, waitnium?
    ¿Quién le va a exigir si es en mentira a nadie?
    Who is going to demand it to him if it is a lie?

13. Yaki exijiasat waitniumsha turakuinkia.
    Aquí nadie le va a exigir si dice que es mentira.
    Nobody is going to demand it to him if it is a lie.

14. [Spanish] Más valen las palabras que pagar.
    Words are more valuable than paying.

15. [Spanish] O sea, si pago yo es porque fue la verdad.
    That is, *if I pay it is because it was true.*

16. Tura tawai ninki tawai n<u>e</u>kas amatainkia.
    Si dice que sí es verdad, voy a pagar.
    If he says that it's true, I will pay.

17. Prueba akuinkia nuna nukap akikmakaintjai tawai, ¿n<u>e</u>kaschan?
    Él dice que, si hay comprobación, dice que puede pagar, ¿verdad?
    He says that if there is verification, he says he can pay, true?

Although, probably insufficient to be considered guilty in any context of dispute, it seems that Bernardo's testimony was sufficient to adduce evidence against Abelardo that lead to his plausible culpability. In addition, the antagonist context in which the horse was found death, was also against Andre's innocence.

In the next section I would like to discuss some interpretations about the dynamics of the dispute and the role of testimony and negotiation in the epistemic construction of the resolution.

8. DISCUSSION

The main motivation of this chapter was to present the centrality of testimony in the process of adducing evidence in a Chicham community of the North side of Pastaza basin. After briefly recapitulating the approaches that legal anthropology took in the analysis of disputes, I pointed out that the epistemic components of conflict resolution in small-scale societies were scarcely analyzed.

The previous case study had many features suitable to be addressed from the point of view of the epistemic strategies that the actors performed during the process of negotiation and adjudication.

And as I mentioned in the first part of this chapter, I was less concerned with the way in which actors acquire beliefs than in the way they use strategies to support their negotiation position against the opposite party. Also, I stated that the analysis of the output of the resolution process, given the proper dynamics of the *irúntramu* was assumed as the result of collective action (e.g., with a strong role of the audience as co-author of the narrative of negotiation and the adjudication process (Bauman, 1986; Brenneis, 1988; A. Duranti, 1986)).

The first point that I would like to remark on in this section is the role of the asymmetric structure that the actors embodied in the events before the negotiation, that shape the structure of the *irúntramu*. One of the events that one can speculate about is what it might be the reason and meaning behind the confession that Abelardo did to Bernardo. Information constitutes a form of epistemic capital, and actors can use it to build alliances, but also to harm antagonistic figures (Krauss, 2017). Abelardo and Bernardo occupy a similar position in the community socio-political structure, in virtue of their subordinated positionality toward their political families, which in both cases are dominated by the Kajuí brothers. Thus, it seems not adventurous to interpret Abelardo' revelation about the horse killing as a strategy to establish an alliance with Bernardo – a peer. However, the information (i.e., epistemic capital) that Bernardo had in possession for many years, was used by him to compensate a wrong action towards Julio. As some actors remarked during my interviews, it seems improbable that Bernardo had talked about the horse killing to Julio if he had not had an extramarital relationship with his niece, Rita. In this interpretation, sharing the information with Julio would be a way to restore his confidence after an act of disloyalty instituted by not recognizing the baby.

Not all the Kajuí brothers were unconditionally supportive of Julio's requirements during the dispute. Particularly two of his younger brothers - Camilo and Gabino - used their privileged voices

to cast doubt over the admissibility and strength of the proof that was adduced by Bernardo. I think that this casting doubt might be interpreted as a case of epistemic regulation (as different to epistemic silencing and oppression (Dotson, 2014; Fricker, 2007)). Particularly Camilo took a strong position by calling Bernardo a liar several times. In this sense, the narrative that took place during the conflict was a way to "create events" whiting the framework of the social structure that prevented an excess of authority from Julio. As Bauman stated, "events are abstractions of narratives" and not the other way around (Bauman, 1986, p. 5). The social truth which the *irúntramu* unveiled was the result of the events created through the actors' narratives, and not a clear reflection of what happened.

The role of the audience, although tangential in terms of time used to make explicit interventions during the *irúntramu* was crucial to discredit a strong division between negotiation and adjudication in the decision-making process that underlies conflict resolution. As Gulliver (1979) stated, disputes sometimes are resolved by a mixture of negotiation and adjudication. Although in Chicham tradition the process of adjudication is not delegated to a special subset of people (i.e., a jury, a group of elders, etc.), in this case, the community members made the decision, by adjudication (32 vs. 11) to not expel Abelardo from the community but delegated the resolution of the monetary compensation to the process of negotiation among the parties. However, as I showed in the examples, several epistemic strategies were implemented by the audience to regulate by strengthening or weakening the adduced evidence (e.g., by questioning its admissibility or its truth-value).

Another epistemic component was relevant during negotiation process, was that a great part of the discussion was centered around the notion of truth and the "best way" to adduce evidence. In this regard, there was a clear consensus that the best form of testimony validation was by verification

through the performance of divination by an expert shaman. Nobody objected the validity of this procedure during the negotiation; thus, Julio's brothers and Abelardo took the lack of verification to diminish the strength of the witness testimony.

Maybe as a strategic way to compensate for that argument, Beatriz presented a narrative in which Julio's visible signs of illness (everybody in the community knows that Julio is suffering from vision loss and other symptoms due to diabetes) were the result of a shamanistic "work" against him. And she even went further by suggesting that a shaman mentioned that the person responsible for Julio's illness was one of his brothers-in-law. The long discussion around bringing a shaman to do a verification of the testimony suggests that this is the most reliable mechanism to adduce evidence in Chicham conflict resolution process. In other words, in a context in which material evidence is not common, people need expert testimony to validate the evidence that supports their position during the negotiation.

Additionally, there are some epistemic monitoring (vigilance) mechanisms that became explicit during the dispute. On the one hand, Bernardo's reputation as a troublemaker put him in a corner, especially under the absence of a shamanistic verification of his testimony. On the other hand, the fact that Abelardo had a fistfight and a conflict with Julio by the time the horse was found dead, situates him in a proper time frame that makes his culpability plausible. Maybe that's why many people recognized during my interviews that he killed the horse, even when they refrained from mentioning that in public.

An example that relates to epistemic regulation strategies during the conflict relates to the following ethnographic experience. When I arrived at the village that Wednesday of August around noon, the community was already reunited in the communal house discussing the issue. After shaking the hand of all community members, as the local norms of politeness establish, I

was invited to sit on the stage next to Gabino and the authorities. As I realized that the dialog was particularly agitated, I asked Gabino for some contextualization. Among other things, he mentioned to me that Bernardo used to lie, and at some point, he also said that to the audience. Thus, my reasoning was that if he believed that Bernardo was lying, he must also believe that Abelardo didn't kill the horse. However, a few days after the conflict was resolved we talked about the situation at his house. I asked him if he really believed that Abelardo didn't kill the horse, and he said, "no, I think he actually did it!" I was confused because I remembered him telling me that Bernardo probably was lying. Thus, I asked him why he said to me in the *irúntramu* that Bernardo was lying, and he said that he lied to compensate the strong position that Julio was holding during the conflict and to avoid expelling Abelardo from the community - which he and most of the community considered an excess of authority from Julio. Thus, lying to cast doubts about Bernardo's testimony was a strategic way to avoid an excess of power from authority.

ORDER RESTORATION

Just a couple of days after the conflict was resolved, one morning, I went to visit Abelardo and to my surprise Camilo and Bernardo were there. They were laughing and having a conversation such as nothing happened. I was shocked, since Bernardo had made an argument in which Abelardo was the probable responsible of his baby's dead, and Camilo overtly called Bernardo a liar. This interaction made me understand better some of the references that took place during the conflict resolution and negotiation.

Penker pujustin comprises the moral and ethical values of mutual respect and cooperativeness that members of the community should show to each other. Beatriz was referring to *Penker pujustin* when she said that if they keep fighting "how are we going to say good morning, how are you?"

And *penker pujustin* was also what Adalberto meant when he said that they need to "know the truth to be free". Free of what? Free of conflict, and free to perform the good way of life. Moreover, *penker pujustin* what was Camilo claimed to make Bernardo accountable: the dark truth came out as the result of his epistemic harm that he caused by revealing information in a speculative fashion, since he refrained to make it public when he came to know it, but not when it was strategically better for him.

My position in the community was a little uncomfortable at times since I'm very close to Julio – I stay usually at his house – but also very close to Abelardo. I like to visit Abelardo almost every day when I'm at the village, and Abelardo' house is a good spot to meet many community dwellers that like to pass by and chat in the afternoon or early morning. After the day in which I saw Bernardo and Camilo at his place, I asked Abelardo how it was for him to manage the situation, since he had to pay and was target of serious accusations from Bernardo. He said that after he paid, everything was over. There was nothing else to discuss and that he could act as if nothing happened. Still, the situation was still tense with Julio. Abelardo mentioned that when he paid him, Julio said that he was not going to tolerate any gossiping in the community against himself, which Abelardo perceived as a hazard. This suggests that the *penker pujustin* is porous, and there is still a latent conflict under the surface.

CONCLUSION

I started this dissertation by asking what lying is, and implied that the question will need a long process to be answered. In this section, I will pay attention three points that I found relevant to discuss to close the process.

The first point is to look at the results. I presented three research projects that address the question of lying from an anthropological perspective, but emphasizing different aspects of the problem. In "*Lying about the future*" the goal was to show that the concept of lying is subject to cultural variation in a way that is very specific to the normative and ontological systems in which the concept is instantiated. In this sense, I showed that for Shuar-Achuar populations the concept reverberates with beliefs about the future and in normative conditions that permeate the pragmatic-semantic interface of language. This was at the heart of the explanation of the difference between commitments and predictions.

Chapter 2, on the other hand, highlights some of the common aspects of the concept of lying in a project in which multiple linguistic and cultural communities were evaluated against the framework of the classic definition of lying. The results showed that the concept seems to be a scalar phenomenon whose critical underlying components can be understood as a prototypical construct. However, the same study showed that the constituents of the prototype are not always hierarchized in the same way across populations.

The final chapter makes a 180 degree turn in the way the concept of lying was methodologically addressed, compared to the first two chapters. In this chapter, the concept is shown in the context of a dispute, negotiation, and decision-making process that leads to a distinction between true and false facts, beliefs, and testimonies. Additionally, the ethnographic description showed that

concepts like truth and lying should also be studied by looking at people's real interactions and not just in experimental conditions.

The second point that i would like to address is about some questions and commentaries that I've received from my committee. The first one is a clarification of the notion of the concept that each research project addressed. Even when I used the term "lie" or "lying" throughout the dissertation, some of the methodological instruments seem to address conceptual instantiation from different points of view. Chapter 2 clearly looks at an abstract representation of what lying is by looking at some deep common features of the concept that are exceptionally expressed in its prototypical instances. Chapter 1, also looks at the concept from the point of view of several hypothesized underlying features, but those features were more functionally defined than the those of Chapter 2 which were more abstract (epistemic valence) and mental (intentions). Chapter 1 explores social factors like expertise, ethnicity, as well as pragmatic features of the social interaction onto which the concept is projected. Finally, Chapter 3 proceeds to look at epistemic instances (including the use of the concept of lying in real conversational context). In this sense, the broad use of the concept that is used in that chapter is more functional than in the other two chapters.

Another relevant commentary raised in conversation with the committee members, is that it is clear from the dissertation that I do not conceive of anthropology as limited to a specific methodological approach. Instead, I consider that it is in a pluralistic methodology and in cross-disciplinary and cross-cultural research where the future of the discipline will find more reach in explanations and will find a thriving territory for future forms of pluralism. As some other authors alleged many times experimental and ethnographic methods should be complementary and not incompatible approaches to the study of human behavioral, symbolic, ecological, and psychological properties.

Finally, I would like to say a word about future directions. As discussed in this dissertation, most work on the study of lying came from analytical philosophy (based in conceptual analysis), and recently from experimental philosophy. Despite the rich material was developed in both traditions, there is plenty work to do in at least two flanks. On the one hand, most experimental approaches are based on narrow definitions, instead of basing the study design in the subjects' inferences that might come from cues that can shape the communicative process (e.g., those mechanisms related to epistemic vigilance). That means that, for instance, that from experimental methods we know something about lying and intentions, but we know almost nothing regarding the role of lying and expertise, prestige, and reputation. The second point that is neglected in the literature about lying and I strongly tried to address in this dissertation is well organized, comprehensive, large cross-cultural studies.

Appendix 1

Lying about the future:

Shuar-Achuar epistemic norms and the opacity of predictions

Supplemental Materials

2. SITES DETAILS

The research was done in three sites in the Pastaza river. The pilot (2015 – 2016) was done in Chinimpi and Chapintza villages. The data of 2017 was collected among Chinimpi, Chapintza, and Iwia. And the data from 2018 and 2019 was collected exclusively from Iwia.

These three villages slightly differ in their degree of urbanization, market integration, bilingualism, development of basic infrastructure, and proximity to non-Shuar-Achuar urban centers. While Chinimpi is closest to Palora (a small "*Colono*" urban town), Iwia is located deeply into the Amazon rainforest. And while in Iwia the traditional economic and linguistic practices are dominant, in Chinimpi the economy has been recently dominated by extensive agriculture and a lower degree of bilingualism, especially among the young. Similarly, the infrastructure -such as internet, water, or cellphone signal- is more developed in Chinimpi, than in Iwia. Additionally, people from Iwia still get most of their nutritional resources from hunting, fishing, and horticulture. Finally, the third site in which we collected data, Chapintza, constitute an intermediate case: it is more market integrated than Iwia, but has less infrastructural development than Chinimpi. Also, Chapintza has relatively high levels of bilingualism, and is in a middle point between Chinimpi and Iwia regarding its closeness to urban centers.

In average population of these communities range from 150 to 300 individuals, and the social and political structure is traditional in all of them: the decisions at the community level are determined by political consensus, and kinship stipulates and permeates alliances and disputes. Finally, most of the intra-communitarian interactions are face-to-face based, and most individuals know each other well and are kin related.

3. SAMPLE DETAILS

3.1 Supplementary Tables (Study data and demographics)

Shuar-Achuar Samples						
Study	**Year**	**Sites**	**N**	**Males**	**Females**	**Age range**
Pilot	2015-2016	Chinimpi, Chapintza	67	30	37	10 - 65
Follow-up 1	2017	Chinimpi, Chapintza, Iwia	48	27	21	17 - 64
Follow-up 2	2018	Iwia	41	19	22	16 - 65
Follow-up 3	2019	Iwia	41	20	22	16 - 66

Table A1.1

International Samples						
Country	**Year**	**N**	**Males**	**Females**	**Other**	**Age range**
Bolivia	2017	150	89	61	0	18 - 58
Ecuador	2017	150	86	64	0	18 - 70
Guatemala	2017	150	89	69	1	18 - 60
Hungary	2017	154	61	93	0	18 - 72
Kazakhstan	2017	150	49	101	0	18 - 60
Nigeria	2017	150	108	42	0	18 - 51
Pakistan	2017	150	110	40	0	18 - 70
Peru	2017	150	71	79	0	18 - 58
Philippines	2017	150	39	110	1	18 - 63
Poland	2017	150	56	93	1	18 - 74
Saudi Arabia	2017	150	80	70	0	18 - 64
Venezuela	2017	150	88	62	0	18 - 59
Viet Nam	2017	150	56	93	1	18 - 63

Table A1.2

4. MATERIALS AND METHODS

4.1 Protocol

Shuar-Achuar participants were interviewed in a private room, usually a school room or at their own houses. Interviews were recorded and the answers were coded in a csv file to be analyzed. Subjects received 5 US dollars as compensation.

International participants were recruited by Qualtrics Panels, who administered the survey via internet. The payment was in accordance with Qualtrics terms and conditions.

4.2 Inclusion criteria and recruitment

In the Shuar-Achuar communities we accepted the participation of teenagers and adults. The first step in the recruitment process was to present the study in a public meeting where community members had the chance to make questions and suggestions regarding the implementation and organization of the study. Additionally, a payment was made to the community.

Once the community members approved the project by consensus, the field researchers visited each house to arrange the time and date of participation in case some family member agreed to participate. Participation was voluntary, and subjects had the right to drop the study at any time without penalization.

4.3 Procedure and introductory text

Once participants agreed to collaborate in the study they meet with the researcher in a quiet place. Usually a house, a shelter, or a school room. The researcher proceeded to ask for oral consent and

to read each vignette slowly and clear. Subjects had the option to ask for several readings or even paraphrasing a line if necessary. Each question had to be answered before moving to the next scenario.

Example of the introductory text that was used in the study:

> *"Good morning. Today I would like to do a short interview with you about the Shuar language and culture. Can I record our conversation?*
>
> *First, could you provide me your name and age? Were you born here, in Chapintza? How long have you been living here?*
>
> *To begin with, I would like to ask you about lies, and what it means to lie in Shuar.*
>
> *Can you tell me what the Shuar word for "lying" is? How does one say: "he lies"? How does one say: "it is a lie"? According to your personal criteria, do you think that lying is bad, very bad, o between bad and good?*
>
> *Now I will tell you series of stories about some people that may or may not have lied. I will ask you for your opinion about what happened in each story. Is it okay?"*

4.4 Scenarios

4.4.1 Pilot Scenarios

I. **Story of Juan the drunk (Adapted from Danziger (2010)) (not included)**

"This story is about a Shuar man, Juan, and his wife María. Juan and María were living in a house in the forest; far from the town were their other family members were living, like cousins, siblings, and brothers and sisters in law. One day, Juan decided to go to the town to have a drink. However, Juan didn't want to tell his wife María that he was going to have a drink. So, Juan, told María: "I'm going to see my youngest brother". It was not true, because he was going to have a drink.

- What do you think: did Juan lie?

After that, Juan went out of the hose to walk to the town. After he went, María's mother came by to visit her daughter. She came into the house and asked María: "Where did your husband go?" María believed what her husband said, so she told her mother, "he went to see his youngest brother". It was not true, although she believed it.

- What do you think: did María lie?

Before reaching the town, Juan reached a road in which there is a liquor-store. Actually, Juan just was going to the store to buy a drink, because he wanted to get drunk. But in this moment, before he reached the store, he saw his youngest brother on the road –the same brother that he mentioned his wife he was going to visit. So, what Juan mentioned before came out to be true.

- Now, what do you think: did Juan lie?

II. **FC(s-i+e-) – (Failed commitment)**

"A Shuar man, Carl, lived in a town that was close to a river. He was invited to a meeting that was going to take place on the other side of the river. Carl said: "Yes, I will be present in the meeting". But the night before the meeting, it rained a lot and the level of the river was too high. Thus, Carl was not present in the meeting and what he said did not come up as the truth.

- So, what do you think, did Carl lie?

III. IMD(s+i-e+) – (Wrong medical diagnosis)

"Dr. Mendoza was a doctor that was working in a Hospital. One day, a man and his wife came to him bringing their daughter that was sick. She had been ill for some weeks and was looking gravely ill. The Doctor did several tests and a thoughtful examination, and finally he said to the parents: "The illness that your daughter has is extremely serious. It seems that it is cancer and it is not possible to perform a surgery. There is no way to cure her. It is true that she is going to die in six months". After hearing that, the parents went back home with their daughter. But after a year, the girl was still alive.

- What do you think: did the Doctor lie?

IV. Jesus movie (Fiction / false representation) (not included)

"There was a movie about Jesus's life. In the movie, there was an actor that performed Jesus. He had long hair and a beard. The movie was called "Jesus's Life".

- What do you think: was the movie a lie?

V. The story of the old Mr. Luís (Mistaken belief/quasi-Gettier) (not included)

"Luís was a man that was born in a small house in the forest, far from the city. When he was ten years old his parents sent him to study to the city. He studied a lot and he married a woman. During this period, he never returned to his old house in the forest. Several years after, he felt the desire to visit the house where he was born and bring his wife to meet the place. But Luís was more than sixty by then, and his parents had died several years before. When he went to see the house, he saw a house that was similar, and the neighbors told him: "Yes, your parents lived here". Thus, Luís was happy and told his wife: "I was born here". But this was not the same house. It was true that Luís's parents had built the house in this place, and that they lived there, but this was not the house where Luís was born. So Luís was wrong, although he thought that this was the house where he was born.

- What do you think: did Luís lie?"

VI.   Mistaken dream (not included)

There is a man that dreams that he is going to be a professor. He says to his friends: "I am going to be a professor". He studies a lot, but finally he couldn't get a job as a professor.

- What do you think: when the man said that he was going to be a professor, did he lie?

VII.   The story of Carla (Gettier case) (not included)

"After going to her farm, a woman, Carla, decided to take a bath in the river. So, she hid her machete under a leaf close to the trail. When she went back to her home, she realized that she forgot the machete. So, she asked her daughter to get it. She told her daughter: "50 meters in the trail, on the left, you are going to find a machete. Bring it to me". But another woman that was walking close by saw the machete under the leaf. She liked the machete because it was new. She took it but put her old machete under the leaf. Thus, when Carla's daughter arrived, there was a machete under the leaf.

- When Carla said, "You are going to find a machete", was she aware that her daughter was going to find a machete, or just she believed it?

- Did Carla lie?"

VIII.   Francisco the professor (Stated uncertain attempts) (not included)

There was a rural school that has a computer. One day, the computer stopped working. One of the professors, Francisco, said his workmates: "I don't know if I can fix the computer, bit it is likely that I will be able to do it. Also, there is a chance to leave the computer in a worse condition. Should I try?" The other professors said yes, that he should try. So, Francisco started fixing the computer. After one hour, the computer burned inside, and it came up totally damage.

- What do you think: did the Professor Francisco lie?

4.4.2 Follow up scenarios

IX.   FC(s+i+e-) (Failed commitment - severity of the outcome = bad)

Jorge was a Shuar man who lived in a rural area and had a truck with which he sold vegetables. Sometimes, people asked Jorge for help in transporting fruits or woods, or even to transport themselves to the city if they needed it.

One day Jorge received a radio call from a Shuar family who lived deep inside the rainforest, just down the road. The family was composed by the couple and a girl. In the call, Jorge was asked to help to transport the girl to the hospital the next day because she felt very bad.

Jorge said yes, that he would be there the next day early in the morning to take the girl to the hospital. But at night there was a lot of wind and there was a storm that threw several trees on the route. Then the road was cut off and Jorge did not go to the family house to pick up the girl.

Finally, the girl died near noon without ever having gone to the hospital.

- Now, what do you think: did Jorge lie?

- What do you think: did Jorge believe that he could be at the family's house the next day?

- What do you think: did Jorge want to help the girl and the family?

- What do you think: did Jorge intend to tell the truth?

X.   IMD(s-i-e+) (Incorrect medical diagnosis - severity of the outcome = good)

There was a lady who took her son to the dentist Gonzalez's office because his tooth ached. Then the dentist, who was known as a very good professional, examined the child carefully: he explored the area of the molar, took an x-ray, and even did a blood test. After the examination, the dentist told the mother "the child has an infection in the tooth and must give him some pills for the pain and infection. Without the pills the pain will not calm down and it will get stronger. "

Since the mother did not have the money to buy the medication, she decided to go home and return the next day to buy the pills; but in the morning, the child no longer had any pain and did not need to take the medication.

- What do you think: did dentist Gonzalez lie?

- What do you think: did dentist Gonzalez believe that the child was going to have more pain?

- What do you think: did dentist Gonzalez want to help the child?

- What do you think: did dentist Gonzalez intend to tell the truth?

XI. FC(s-i+e+a) (Failed commitment accurate source)

A man, Carl, lived in a town in a rural area that was close to a river. When the level of the river was low it could be crossed on foot, but sometimes after strong rains the river became impassable. Carl was invited to a meeting that was going to take place on the other side of the river. Before he accepted, Carl consulted some of the fishermen who knew the river very well, because he knew sometimes the river became impassable due to heavy rains. The fishermen said that during that season the water level was always low, and the river almost never became impassable. So, Carl decided to accept the invitation and he said: "Yes, I will be present at the meeting". However, the night before the meeting, contrary to what the fishermen had said, it rained a lot. The day of the meeting, the water level of the river was too high for Carl to cross. Thus, he was not present in the meeting.

- What do you think: did Carl lie?

- What do you think: did Carl believe he was going to be at the meeting? [

- What do you think: did Carl want to be at the meeting?

- What do you think: did Carl intend to tell the truth?

XII. FC(s-i+e-i) (Failed commitment inaccurate source)

A man, Carl, lived in a town in a rural area that was close to a river. When the level of the river was low it could be crossed on foot, but sometimes after strong rains the river became impassable. Carl was invited to a meeting that was going to take place on the other side of the river. Before he accepted, Carl consulted with his wife about whether it would be possible to cross, because he knew sometimes the river became impassable due to heavy rains. In fact, his wife knew almost nothing about the river but decided to give him her opinion anyway, and she said, "yes, you'll be able to cross with no problem." So, Carl

decided to accept the invitation and he said: "Yes, I will be present at the meeting". However, the night before the meeting, contrary to what his wife had said, it rained a lot. The day of the meeting, the water level of the river was too high for Carl to cross. Thus, he was not present in the meeting.

- What do you think: did Carl lie?

- Did Carl' wife lie?

- What do you think: did Carl believe he was going to be at the meeting?

- What do you think: did Carl want to be at the meeting?

- What do you think: did Carl intend to tell the truth?

XIII.   IMD(s+i-e+i) (Incorrect medical diagnosis inaccurate source)

Dr. Mendoza was a doctor who worked at a hospital. One day, a man and his wife came to him with their daughter, who was very sick. She had been sick for some weeks and was looking gravely ill. The doctor examined the girl and did a series of tests. These tests were experimental and had a high degree of uncertainty, and sometimes failed to produce the correct result. In this case, the tests came out positive for a serious form of cancer. After seeing the results, Dr. Mendoza said to the parents: "The illness that your daughter has is extremely serious. It seems that it is cancer and it is not possible to perform a surgery. There is no way to cure her. She is going to die within six months". After hearing that, the parents went back home with their daughter. They were very sad and made preparations for her passing. But after a year, the girl was still alive.

- What do you think: did Dr. Mendoza lie?

- What do you think: did Dr Mendoza believe the girl was going to die?

- What do you think: did Dr Mendoza want to help the girl and her family?

- What do you think: did Dr Mendoza intend to tell the truth?

XIV. IMD(s+i-e+a) (Incorrect medical diagnosis accurate source)

Dr. Mendoza was a doctor who worked at a hospital. One day, a man and his wife came to him with their daughter, who was very sick. She had been sick for some weeks and was looking gravely ill. The doctor examined the girl and did a series of tests. These tests were extremely accurate and produced the correct result with a high degree of certainty. In this case, the tests came out positive for a serious form of cancer. After seeing the results, Dr. Mendoza said to the parents: "The illness that your daughter has is extremely serious. It seems that it is cancer and it is not possible to perform a surgery. There is no way to cure her. She is going to die within six months". After hearing that, the parents went back home with their daughter. They were very sad and made preparations for her passing. But after a year, the girl was still alive.

- What do you think: did Dr. Mendoza lie?

- What do you think: did Dr Mendoza believe the girl was going to die?

- What do you think: did Dr Mendoza want to help the girl and her family?

- What do you think: did Dr Mendoza intend to tell the truth?

XV. IMD(s+i+e+) (Incorrect medical diagnosis by an ingroup member (shaman)

"There was a Shuar couple that had a boy that was sick. So, they decided to bring the kid to a shaman that lived in a village down the river. This shaman was a very powerful man, and very benevolent. He was always helping people that was sick and didn't asked money for it. He did it always for free. When the shaman saw the kid, he said: 'The boy is very sick. I'm sorry, but there is nothing that I or anyone else can do. He will die in a week or two'. The couple went back to their house. But after a year, the boy was still alive".

- What do you think, did the shaman lie?

- What do you think, did the shaman believe that the boy was going to die?

- What do you think, did the shaman try to help the kid?

- What do you think, did the shaman something bad?

- What do you think, did the shaman have the intention to lie?

XVI.   FC(s-i-e-) (Failed commitment by an outgroup member)

"A non-Shuar man, Ricardo, was invited to a party in a Shuar community located at the other side of the river. He said, "I will be there". However, the day of the party, the river overflowed, and Ricardo was not at the party".

- What do you think, did Ricardo lied when he said: "I will be there"?

- What do you think, did he believe that he was going to be at the party?

- What do you think, did he have the intention of being at the party?

XVII.   FC(s-i-e+) (Failed commitment by expert - severity of the outcome = good)

"Dr. Salcedo said by radio to the inhabitants of a Shuar community: 'I will arrive in the community to cure people on Tuesday morning.' However, on Tuesday it rained, and the route was closed, so Dr. did not reach the community."

- Did the doctor lie?

- Did the doctor do something wrong?

- Did the doctor believe what he said was true?

- Did the doctor have the intention to lie to y?

- Did the doctor have the intention to deceive y?

- Did the doctor know that what he said was not going to happen?

- Did the doctor understand that what he said was not going to happen?

- Should the doctor be blamed for what he said?

XVIII.   FC(s+i-e+) (Failed commitment by expert - severity of the outcome = bad)

"Dr. Juarez received a call from a family that lived in a Shuar community inside the jungle. They called him because their daughter was sick. Dr. said, 'in two hours I will be there with the ambulance to bring the girl to the hospital and do her studies.'

However, the wind gained strength and trees fell blocking the route. So Dr. did not go to look for the girl who died that same afternoon."

- Did the doctor lie?

- Did the doctor do something wrong?

- Did the doctor believe what he said was true?

- Did the doctor have the intention to lie to y?

- Did the doctor have the intention to deceive y?

- Did the doctor know that what he said was not going to happen?

- Did the doctor understand that what he said was not going to happen?

- Should the doctor be blamed for what he said?

XIX.   **IP(s-i-e-)**   **(Incorrect prediction by non-expert; severity of the outcome = good)**

"Dr. Gonzales was visiting a Shuar community at the home of José, a member of the community. While Dr. was visiting the family, José told Dr. that he had bought a truck a few months ago but that the day before it had broken. Then Dr. tells him that he knows about mechanics and that he wanted to see the truck. After inspecting the truck, Dr. says 'this truck is totally broken, it has no fix and it doesn't work anymore. No one will be able to fix it'. However, a week later, a local mechanic came to the community and fixed the truck."

- Did the doctor lie?

- Did the doctor do something wrong?

- Did the doctor believe what he said was true?

- Did the doctor have the intention to lie to y?

- Did the doctor have the intention to deceive y?

- Did the doctor know that what he said was not going to happen?

- Did the doctor understand that what he said was not going to happen?

- Should the doctor be blamed for what he said?

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XX. FC (unpaid Debt) (Not included in the study)

"Dr. Pérez received a patient who had a stomachache. The doctor told him that he had to have a blood test and that that would cost $ 50. The patient agreed to do the analysis and pay. However, when he went to get the results, the secretary told the patient that Dr. had been wrong, that the cost should have been 30 and not 50 - as Dr. had said. Then the secretary called the Dr. to come so he can talk to the patient. The doctor told the patient, 'Do not worry, I will return the 20 dollars that you paid in error and I owe you. I'll send them tomorrow to your house with a taxi'. However, the doctor never sent the money with the taxi - nor did him even call the taxi. In addition, he closed the office shortly and left the city without ever paying his debt."

- Did the doctor lie?

- Did the doctor do something wrong?

- Did the doctor believe what he said was true?

- Did the doctor have the intention to lie to y?

- Did the doctor have the intention to deceive y?

- Did the doctor know that what he said was not going to happen?

- Did the doctor understand that what he said was not going to happen?

- Should the doctor be blamed for what he said?

XXI. IMD(s+i+e-) (Incorrect prognosis by non-expert severity of the outcome = bad)

"There was a child in a Shuar community who was very sick. Then, Pedro, a neighbor of the community came to visit the house. The boy was lying next to the fire because he was cold. And although Pedro was not a doctor or a Shaman, nor did he know about the medicine he saw the child and told the boy's parents: 'this child is very sick, has cancer and will die within a week'. The parents became very sad, but after a year the child was still alive."

- Did Pedro lie?

- Did Pedro do something wrong?

- Did Pedro believe what he said was true?

- Did Pedro have the intention to lie to y?

- Did Pedro have the intention to deceive y?

- Did Pedro know that what he said was not going to happen?

- Did Pedro understand that what he said was not going to happen?

- Should Pedro be blamed for what he said?

XXII. IMD(s-i+e-) (Incorrect prognosis by non-expert - severity of the outcome = good)

"Andrés, a member of a Shuar community was working with one of his children when his son fell silent from the roof of the house and hit his back. The boy complained a lot about the pain. Then Andrés told him 'you have to stay in bed and rest. Also, you have to take a pain pill. If you don't do that, the pain will be stronger and stronger. Since the boy did not like taking medicine or being in bed, he ignored his father and never took the pill or lay down to rest. However, the child's pain disappeared within an hour or two. "

- Did Andres lie?

- Did Andres do something wrong?

- Did Andres believe what he said was true?

- Did Andres have the intention to lie to y?

- Did Andres have the intention to deceive y?

- Did Andres know that what he said was not going to happen?

- Did Andres understand that what he said was not going to happen?

- Should Andres be blamed for what he said?

XXIII.   P(rain) (Incorrect prediction of weather by non-expert - severity of the outcome =

good)

"Jorge, a member of a Shuar community, said one day to some neighbors," I'm sure it's going to rain tomorrow. " However, the next day it didn't rain nor was there even any cloud in the sky."

- Did Jorge lie?

- Did Jorge do something wrong?

- Did Jorge believe what he said was true?

- Did Jorge have the intention to lie to y?

- Did Jorge have the intention to deceive y?

- Did Jorge know that what he said was not going to happen?

- Did Jorge understand that what he said was not going to happen?

- Should Jorge be blamed for what he said?

XXIV.   IP(price)   (Incorrect prediction of prices by expert (politician) - severity of the

outcome = good)

"A politician tells the townspeople: 'the price of wood will be higher next year, and everyone will have more money.' However, the price of wood went down next year, and everyone earned less money than they expected."

- Did the politician lie?

- Did the politician do something wrong?

- Did the politician believe what he said was true?

- Did the politician have the intention to lie to y?

- Did the politician have the intention to deceive y?

- Did the politician know that what he said was not going to happen?

- Did the politician understand that what he said was not going to happen?

- Should the politician be blamed for what he said?

XXV.   IP(bridge) (Incorrect prediction of construction by engineer - severity of the outcome = good)

"An engineer who was making a bridge near the community says: 'this bridge is strong enough for motorcycles, cars, and large trucks to pass. " However, the bridge fell after the first truck passed."

- Did the engineer lie?

- Did the engineer do something wrong?

- Did the engineer believe what he said was true?

- Did the engineer have the intention to lie to y?

- Did the engineer have the intention to deceive y?

- Did the engineer know that what he said was not going to happen?

- Did the engineer understand that what he said was not going to happen?

- Should the engineer be blamed for what he said?

Appendix 2

Intentions, falsehoods, and beliefs:

a study of the prototypical concept of lying in eleven languages

Supplemental Materials

1. ATTRIBUTION OF "LYING"

Participants and observations

After dropping incomplete responses, there were n = 1307 participants who provided a total of N =10450 responses. Table A2.1 displays the number of participants (n) and the number of observations (N) from each sample.

Site / Population	n	N
AFRIKAANS	73	584
CHINA	141	1128
ECUADOR	71	568
ISUZULU	72	576
JAPAN	76	608
KOREA	70	560
MOROCCO	83	664
PERU	77	616
SHIPIBO	50	400
SLOVAK	251	2002
UKRAINE	250	2000
USA	93	744

Table A2.1

Design

Participants were presented with a vignette describing a speech act. Vignettes varied whether the speaker intended to deceive the listener, believed to proposition to be false, and whether the proposition was actually false; these were crossed in a fully factorial design. Participants were presented every vignette in a randomized order. After reading each vignette, participants were given a series of statements and asked to rate their agreement with that statement. Here, we focus on the statement, "S lied". Figure A2.1 is a histogram of responses by each condition.
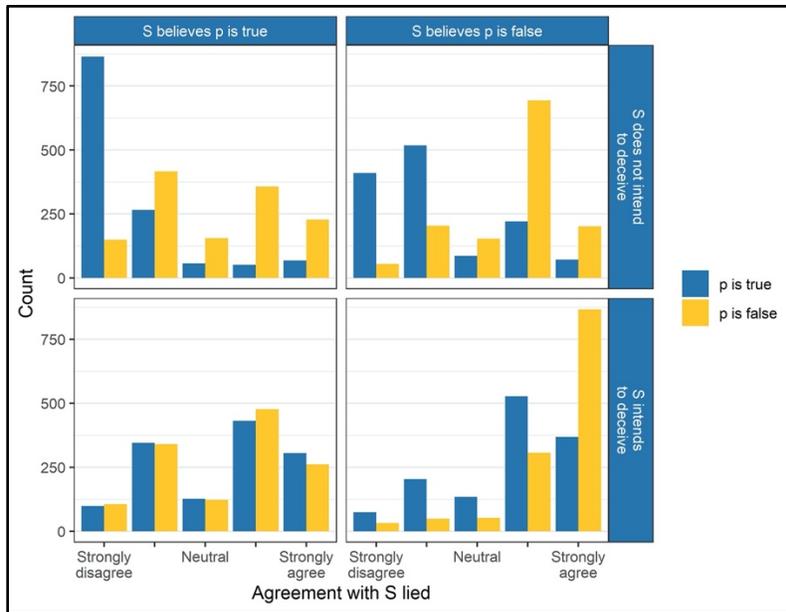
Figure A2.1

Analysis

I analyzed the data using an ordered logistic regression. I regressed responses to this question on the three factors, with random intercepts and slopes for subject and site. Note that the interactions were not analyzed because the goal was to compare which factor most contributed to the concept of lying, and interactions render such comparisons uninterpretable.

Table A2.2 displays the posterior estimates for each effect. pd is the proportion of the posterior greater than 0 and % in ROPE is the proportion of the posterior in the Region of Practical Equivalence, which is the range of values similar enough to 0 as to be "practically equivalent" to it. When a parameter's distribution is mostly out of this region, we can conclude there is an effect, while if the distribution is mostly in this region, we can conclude there is no effect. The distribution being in and out of the region means we cannot conclude either way. Here, the ROPE is -0.18 to 0.18.

Effect	Median	90% HDI	pd	% in ROPE
S intended to deceive	1.73	1.32, 2.11	100	0.00
p is false	1.44	1.15, 1.73	100	0.00
S believes p is false	1.16	0.89, 1.41	100	0.00

Table A2.2

Figure A2.2 plots the posterior distribution of each effect on the lie response. The dashed line indicates the ROPE.
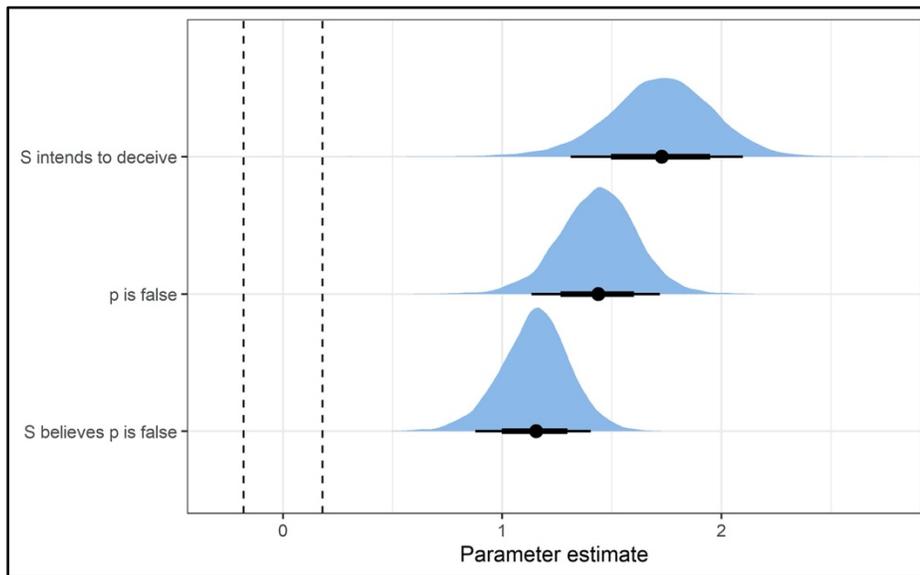
Figure A2.1

Table A2.3 displays the posterior estimates of the comparisons between each parameter; that is, values are computed from the difference between Effect 1 and Effect 2 across the posterior.

Effect 1	Effect 2	Median	90 % HDI	pd	% in ROPE
Intent	False	0.29	-0.08, 0.64	90.5	26.8
Intent	Belief	0.58	0.11, 0.99	97.8	6.7
False	Belief	0.29	-0.03, 0.62	92.9	26.5

Table A2.3

Figure A2.3 plots the posterior distributions of the comparisons.
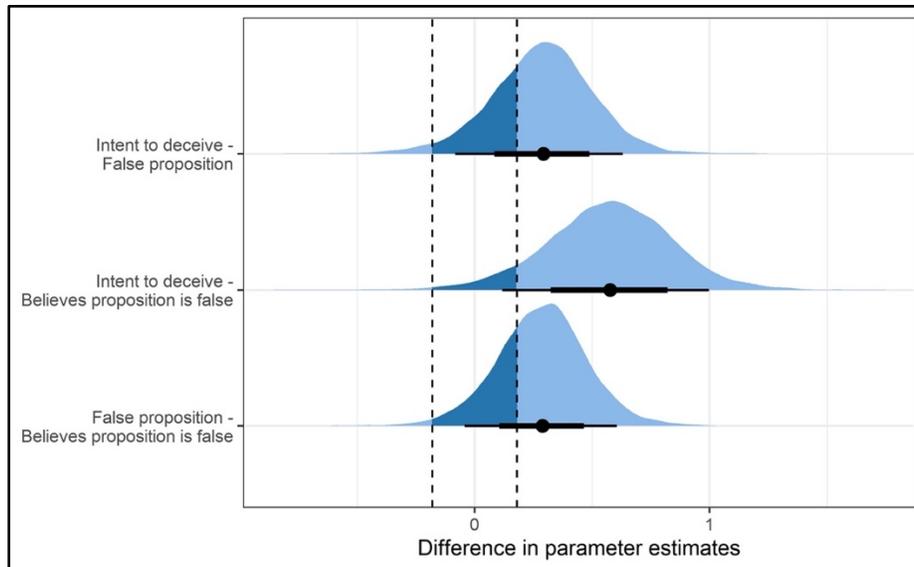
Figure A2.2

Figure A2.4 plots the predicted fit of the model, with the x-axis being the response categories and the y-axis the probability of responding with a given category. Each line a separate draw from the posterior; more solid areas indicating more overlap means more probable values. Overlaid atop the predicted fits is the proportion of observed responses within each response category. This allows us to examine how well the model fits the data.
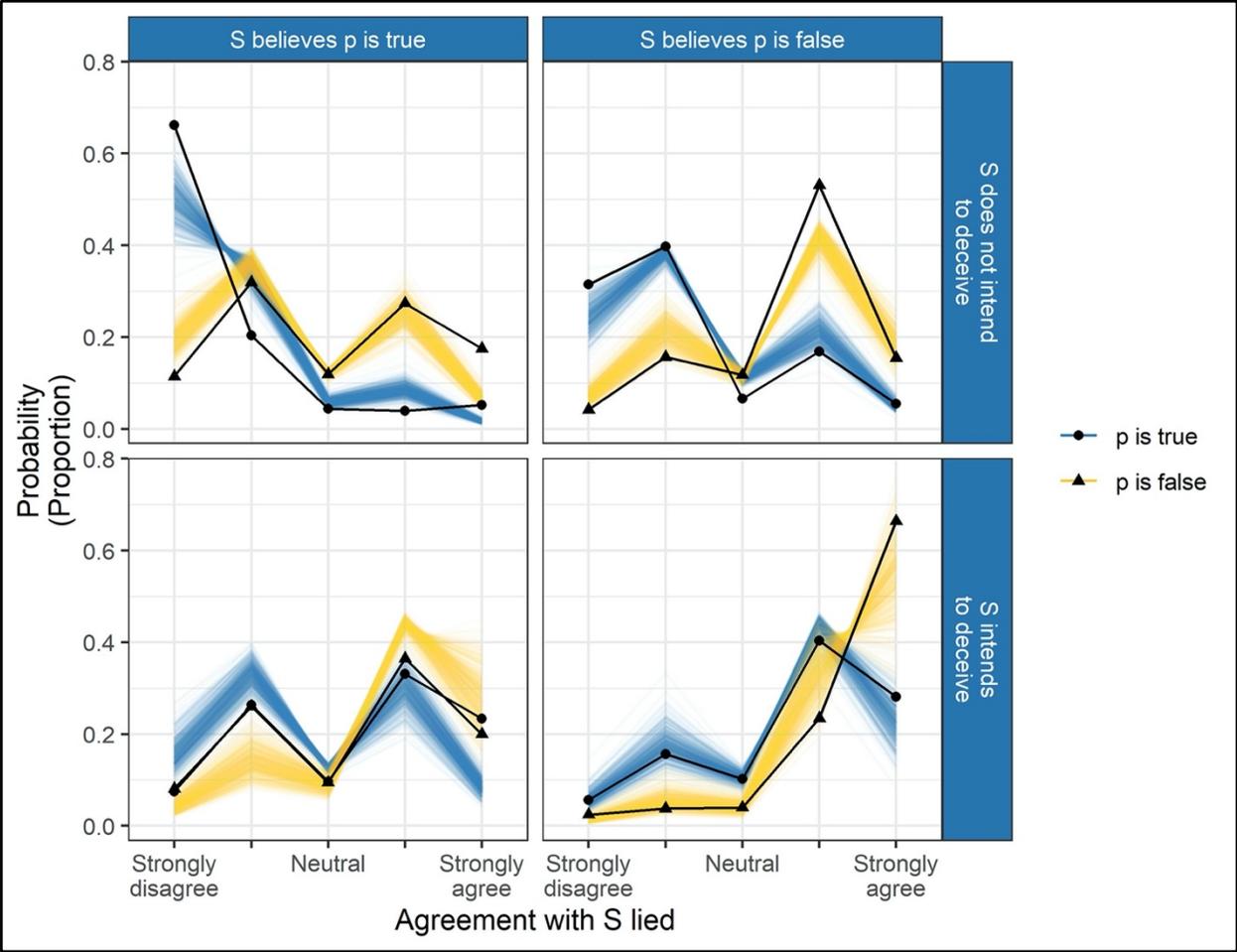
Figure A2.3

Variation across samples

Table A2.4 displays the slopes for each effect for each country. Notably, with the exception of Shipibo, there are large, robust effects for each parameter in each country.

Sample / population	Effect	Median	95% HDI	pd	% in ROPE
AFRIKAANS	Belief	1.06	0.80, 1.32	100	0.00
AFRIKAANS	Falsity	1.8	1.52, 2.08	100	0.00
AFRIKAANS	Intent	2.21	1.89, 2.51	100	0.00
CHINA	Belief	1.19	1.00, 1.38	100	0.00
CHINA	Falsity	1.18	0.99, 1.38	100	0.00
CHINA	Intent	1.17	0.96, 1.39	100	0.00
ECUADOR	Belief	1.23	0.97, 1.49	100	0.00
ECUADOR	Falsity	1.84	1.57, 2.12	100	0.00
ECUADOR	Intent	2.02	1.72, 2.34	100	0.00
isiZULU	Belief	0.86	0.58, 1.12	100	0.00
isiZULU	Falsity	1.74	1.45, 2.03	100	0.00
isiZULU	Intent	1.72	1.40, 2.02	100	0.00
JAPAN	Belief	1.97	1.71, 2.24	100	0.00
JAPAN	Falsity	1.65	1.38, 1.95	100	0.00
JAPAN	Intent	2.3	1.99, 2.61	100	0.00
KOREA	Belief	1.28	1.03, 1.55	100	0.00
KOREA	Falsity	1.19	0.91, 1.45	100	0.00
KOREA	Intent	1.51	1.19, 1.82	100	0.00
MOROCCO	Belief	0.57	0.32, 0.81	100	0.00
MOROCCO	Falsity	1.13	0.87, 1.40	100	0.00
MOROCCO	Intent	2.49	2.21, 2.79	100	0.00
PERU	Belief	1.65	1.39, 1.92	100	0.00
PERU	Falsity	1.83	1.56,2.11	100	0.00
PERU	Intent	1.88	1.58, 2.20	100	0.00
SHIPIBO	Belief	0.29	-0.01, 0.59	94.2	26.7
SHIPIBO	Falsity	0.05	-0.27, 0.38	60.1	61.9
SHIPIBO	Intent	-0.04	-0.40, 0.31	42.8	59.3
SLOVAK	Belief	1.22	1.07, 1.36	100	0.00
SLOVAK	Falsity	1.78	1.63, 1.94	100	0.00
SLOVAK	Intent	1.97	1.80, 2.14	100	0.00
UKRAINE	Belief	1.34	1.18, 1.50	100	0.00
UKRAINE	Falsity	2.2	2.02, 2.37	100	0.00
UKRAINE	Intent	3.06	2.88, 3.26	100	0.00
USA	Belief	1.81	1.58, 2.06	100	0.00
USA	Falsity	1.97	1.72, 2.22	100	0.00
USA	Intent	2.08	1.81, 2.36	100	0.00

Table A2.4

Figure A2.5 plots the parameter coefficient for each effect by sample. That is, this is the estimates from posterior distributions of the main effect + the posterior distribution of the country's slope.
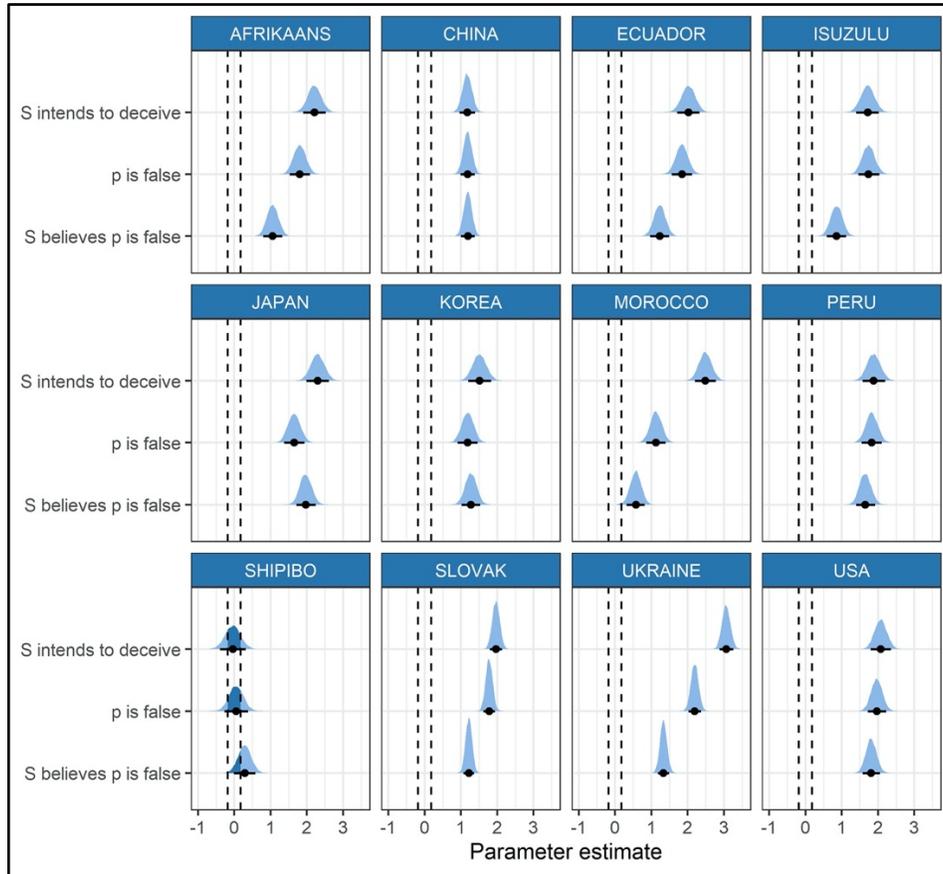
Figure A2.4

Figure A2.6 displays the posterior distribution of the difference between each parameter by each sample.
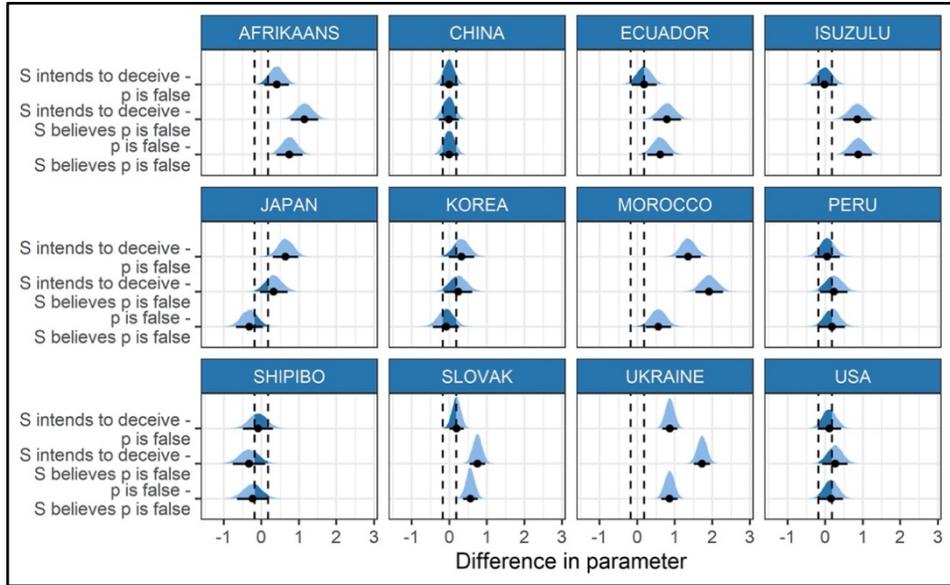
Figure A2.5

Finally, figure A2.7 plots the order and proportions for each scenario by country.
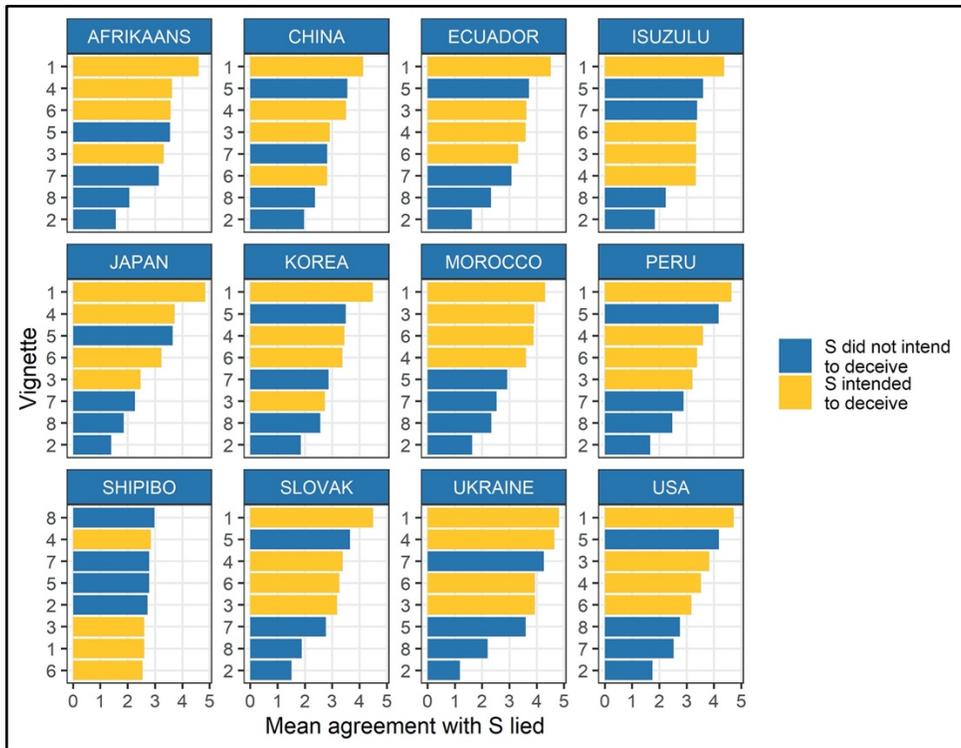
Figure A2.6

2. ATTRIBUTION OF "BAD"

Participants and observations

After dropping incomplete responses, there were n = 1307 participants who provided a total of N =10447 responses. Table A2.5 displays the number of participants (n) and the number of observations (N) from each sample.

Site / Population	n	N
AFRIKAANS	73	584
CHINA	141	1128
ECUADOR	71	568
ISUZULU	72	576
JAPAN	76	608
KOREA	70	560
MOROCCO	83	664
PERU	77	616
SHIPIBO	50	400
SLOVAK	251	2999
UKRAINE	250	2000
USA	93	744

Table A2.5

Design

Here, we focus on the statement, "S did something bad". Figure A2.8 is a histogram of responses by each condition.
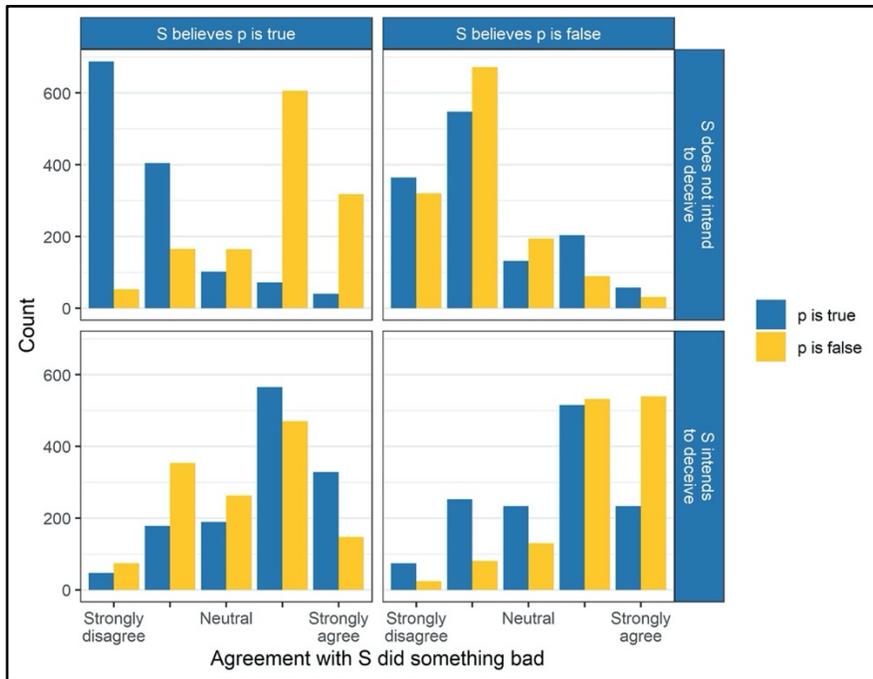
Figure A2.7

Analysis

I analyzed the data using an ordered logistic regression. I regressed responses to this question on the three factors, with random intercepts and slopes for subject and site. Note that the interactions were not analyzed because the goal was to compare which factor most contributed to the concept of lying, and interactions render such comparisons uninterpretable.

Table A2.6 displays the posterior estimates for each effect. pd is the proportion of the posterior greater than 0 and % in ROPE is the proportion of the posterior in the Region of Practical Equivalence, which is the range of values similar enough to 0 as to be "practically equivalent" to it. When a parameter's distribution is mostly out of this region, we can conclude there is an effect, while if the distribution is mostly in this region, we can conclude there is no effect. The distribution being in and out of the region means we cannot conclude either way. Here, the ROPE is -0.18 to 0.18.

Effect	Median	90% HDI	pd	% in ROPE
S intended to deceive	1.63	1.28, 1.99	100	0.00
p is false	0.80	0.6, 0.99	100	0.00
S believes p is false	-0.06	-0.19, 0.08	22.1	92.9

Table A2.6

Figure A2.9 plots the posterior distribution of each effect on the bad response. The dashed line indicates the ROPE.
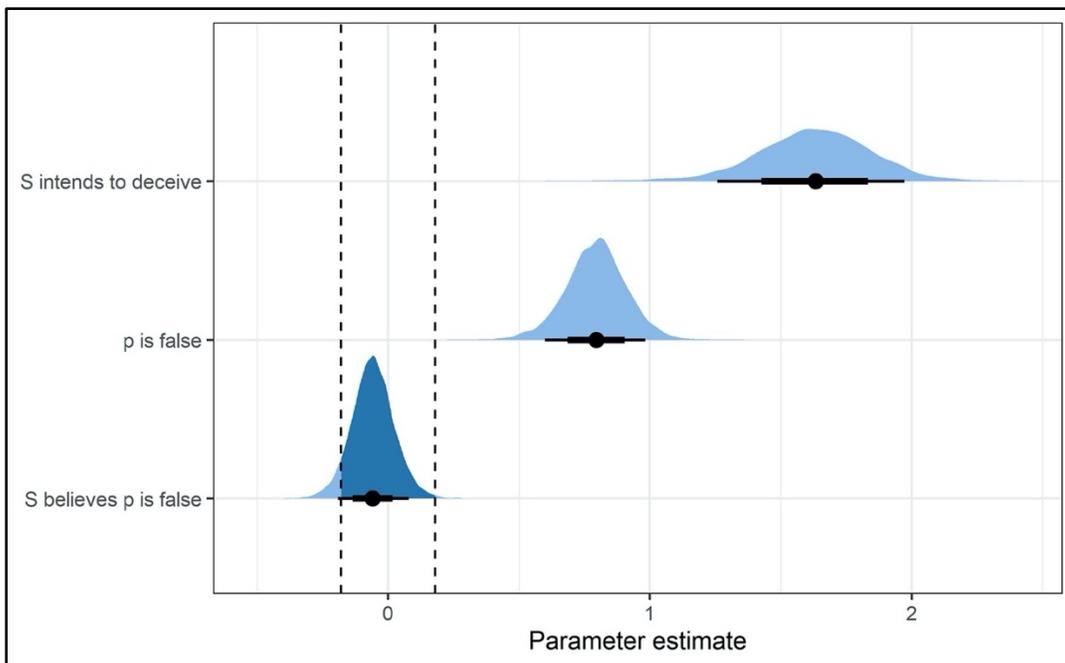
Figure A2.8

Table A2.7 displays the posterior estimates of the comparisons between each parameter; that is, values are computed from the difference between Effect 1 and Effect 2 across the posterior.

Effect 1	Effect 2	Median	90 % HDI	pd	% in ROPE
Intent	False	0.84	0.48, 1.19	99.9	0.60
Intent	Belief	1.69	1.30, 2.11	100	0.00
False	Belief	0.85	0.63, 1.08	100	0.00

Table A2.7

Figure A2.10 plots the posterior distributions of the comparisons.
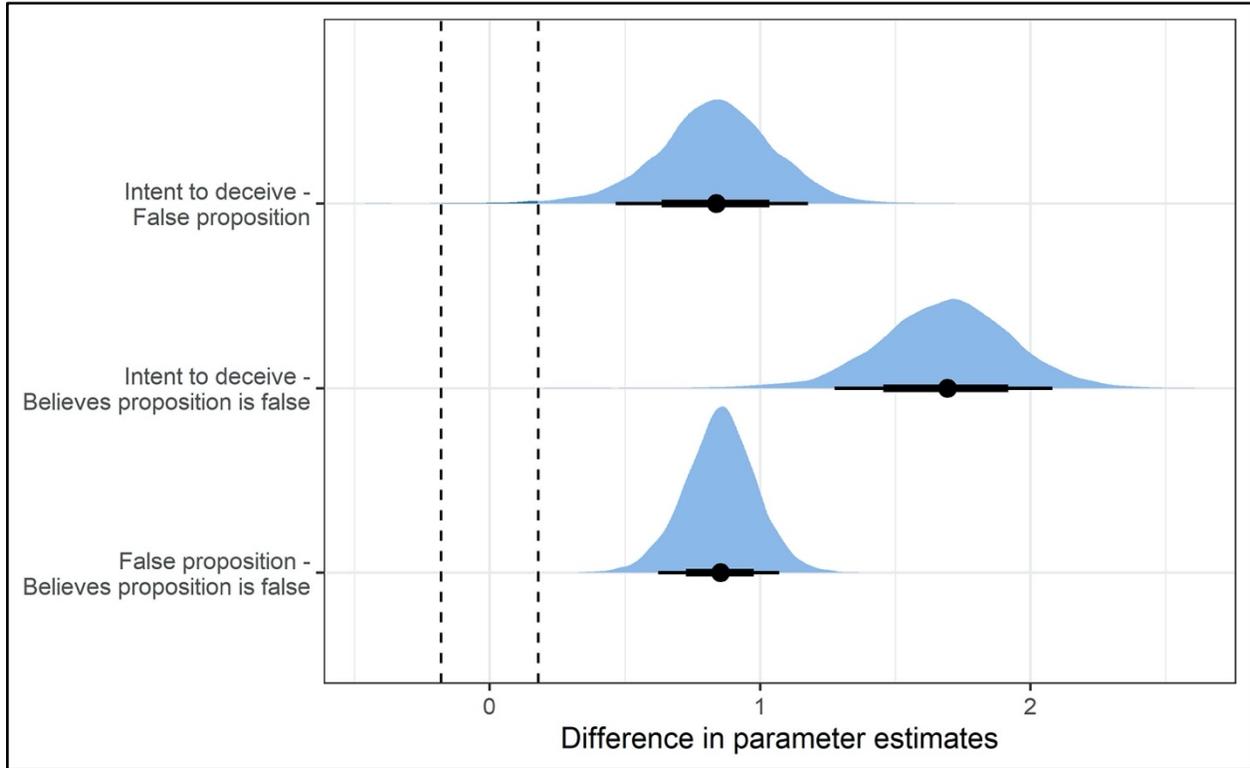
Figure A2.9

Figure A2.11 plots the predicted fit of the model, with the x-axis being the response categories and the y-axis the probability of responding with a given category. Each line a separate draw from the posterior; more solid areas indicating more overlap means more probable values. Overlaid atop the predicted fits is the proportion of observed responses within each response category. This allows us to examine how well the model fits the data.
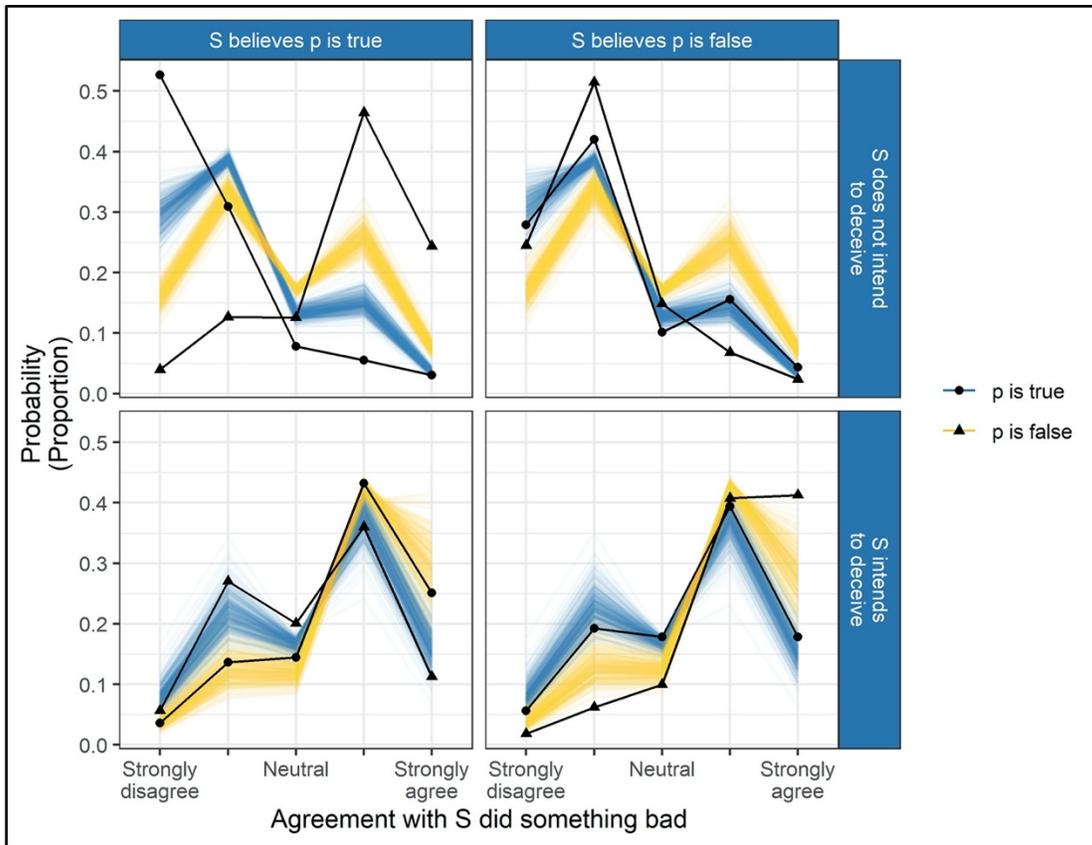
Figure A2.10

Variation across samples

Table A2.8 displays the slopes for each effect for each country. Notably, with the exception of Shipibo, there are large, robust effects for each parameter in each country.

Sample / population	Effect	Median	95% HDI	pd	% in ROPE
AFRIKAANS	Belief	0.01	-0.20, 0.21	51.8	85.8
AFRIKAANS	Falsity	1.16	0.94, 1.40	100	0.00
AFRIKAANS	Intent	2.11	1.84, 2.38	100	0.00
CHINA	Belief	-0.12	-0.28, 0.03	8.9	73.3
CHINA	Falsity	0.66	0.49, 0.83	100	0.00
CHINA	Intent	1.33	1.14, 1.53	100	0.00
ECUADOR	Belief	-0.10	-0.31, 0.10	20.2	72.6
ECUADOR	Falsity	0.99	0.75, 1.22	100	0.00
ECUADOR	Intent	1.51	1.25, 1.79	100	0.00
isiZULU	Belief	0.41	0.15, 0.70	99.2	9.10
isiZULU	Falsity	1.34	1.07, 1.59	100	0.00
isiZULU	Intent	1.66	1.36, 1.93	100	0.00
JAPAN	Belief	-0.04	-0.25, 0.16	36.2	83.1
JAPAN	Falsity	0.92	0.70, 1.15	100	0.00
JAPAN	Intent	1.98	1.72, 2.25	100	0.00
KOREA	Belief	-0.08	-0.28, 0.13	26.3	78.5
KOREA	Falsity	0.49	0.27, 0.73	99.9	1.60
KOREA	Intent	1.42	1.14, 1.69	100	0.00
MOROCCO	Belief	-0.24	-0.43, -0.02	2.10	32.1
MOROCCO	Falsity	0.79	0.57, 1.01	100	0.00
MOROCCO	Intent	2.40	2.15, 2.67	100	0.00
PERU	Belief	-0.24	-0.45, -0.04	2.5	32.6
PERU	Falsity	0.88	0.66, 1.11	100	0.00
PERU	Intent	1.82	1.56, 2.08	100	0.00
SHIPIBO	Belief	0.02	-022, 0.29	55.9	75.2
SHIPIBO	Falsity	0.15	-0.14, 0.44	80.8	53.2
SHIPIBO	Intent	0.05	-0.26, 0.40	60.6	62.1
SLOVAK	Belief	-0.23	-0.36, -0.11	0.20	25.6
SLOVAK	Falsity	0.73	0.60, 0.86	100	0.00
SLOVAK	Intent	1.65	1.49, 1.79	100	0.00
UKRAINE	Belief	-0.03	-0.15, 0.11	37.0	97.2
UKRAINE	Falsity	0.73	0.59, 0.87	100	0.00
UKRAINE	Intent	2.59	2.43, 2.75	100	0.00
USA	Belief	-0.07	-0.26, 0.11	25.8	82.5
USA	Falsity	0.95	0.74, 1.15	100	0.00
USA	Intent	1.90	1.65, 2.14	100	0.00

Table A2.8

Figure A2.12 plots the parameter coefficient for each effect by sample. That is, this is the estimates from posterior distributions of the main effect + the posterior distribution of the country's slope.
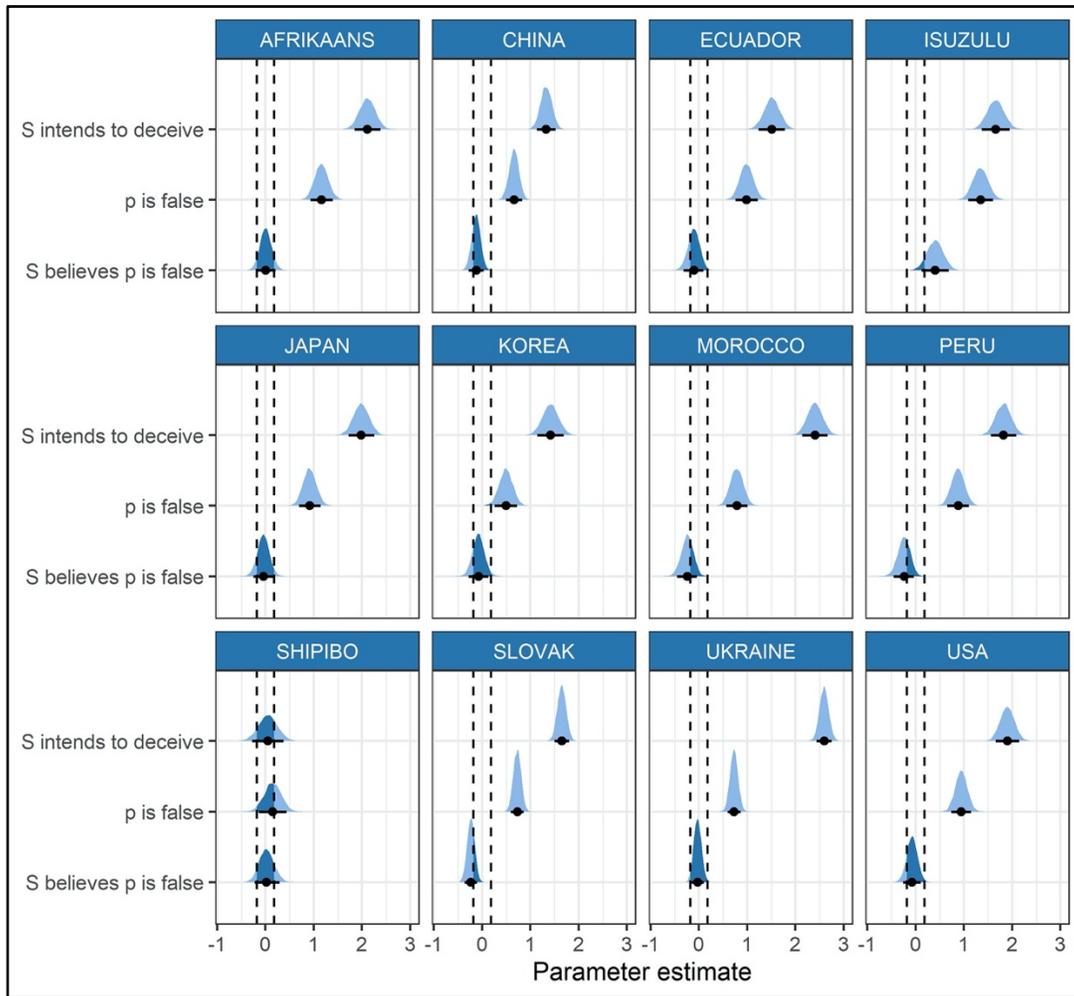
Figure A2.11

Figure A2.13 displays the posterior distribution of the difference between each parameter by each sample.
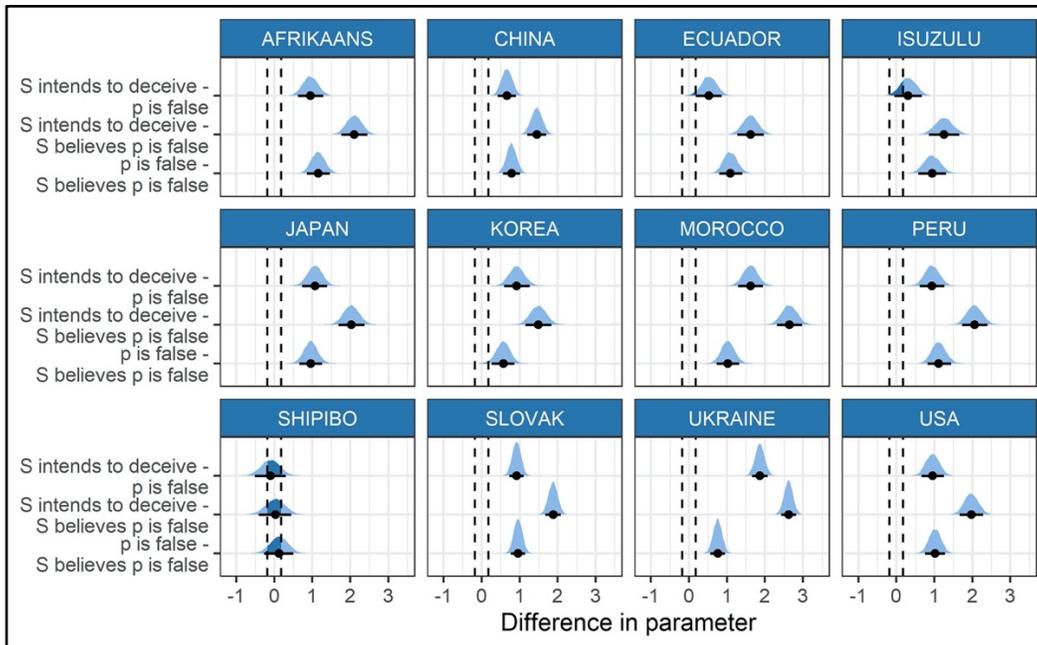
Figure A2.12

Finally, figure A2.14 plots the order and proportions for each scenario by country.
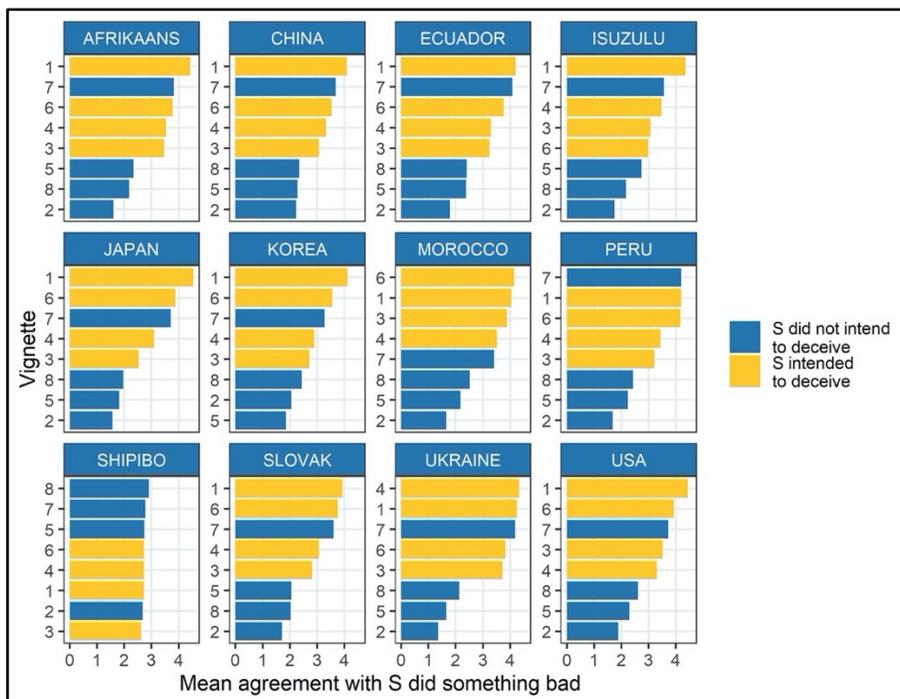
Figure A2.13

3. ATTRIBUTION OF "INSINCERE"

Participants and observations

After dropping incomplete responses, there were n = 1307 participants who provided a total of N = 10445 responses. Table A2.9 displays the number of participants (n) and the number of observations (N) from each sample.

Site / Population	n	N
AFRIKAANS	73	584
CHINA	141	1128
ECUADOR	71	568
ISUZULU	72	576
JAPAN	76	608
KOREA	70	560
MOROCCO	83	664
PERU	77	616
SHIPIBO	50	400
SLOVAK	251	1997
UKRAINE	250	2000
USA	93	744

Table A2.9

Design

Here, we focus on the statement, "S was insincere". FigureA2.15 is a histogram of responses by each condition.
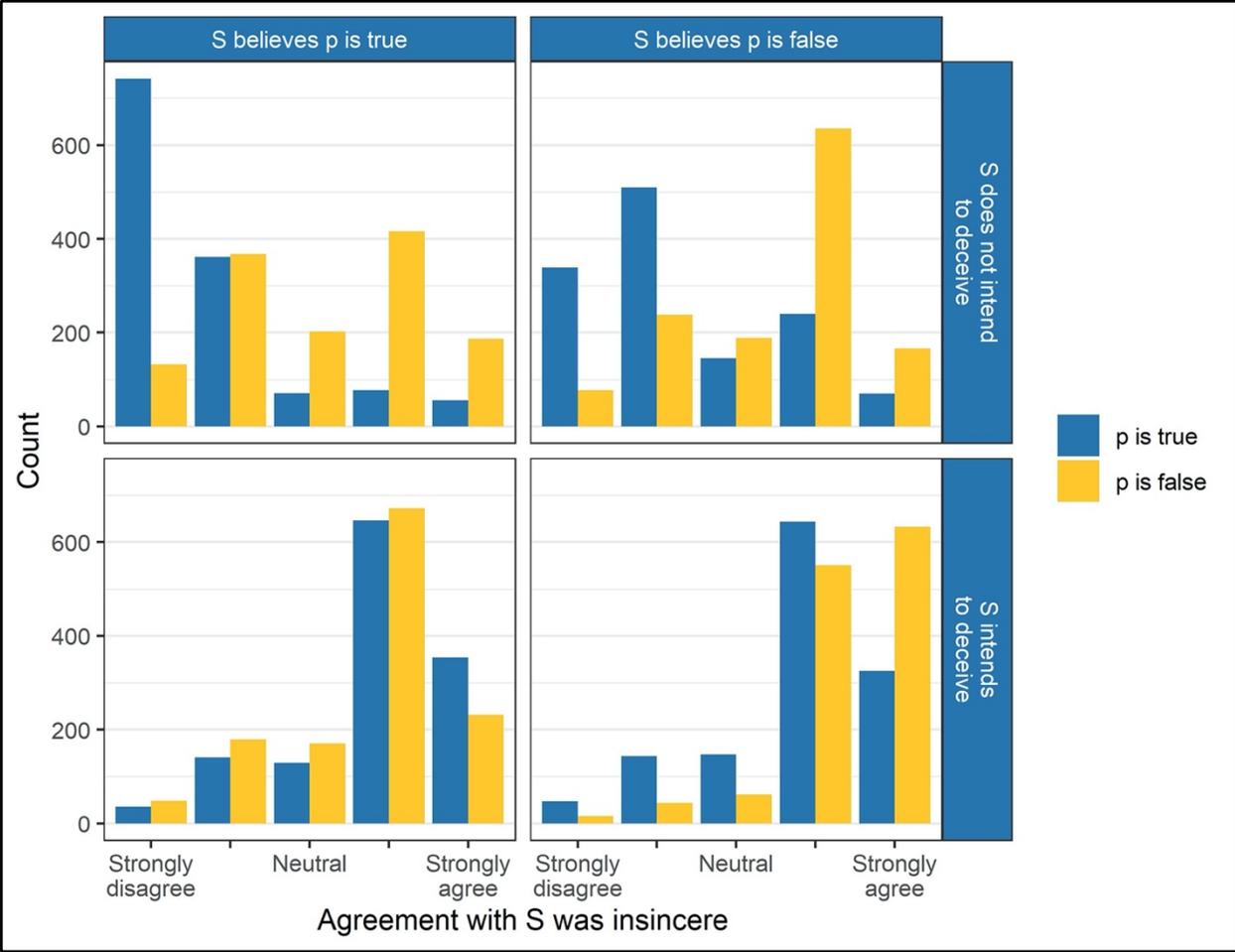
Figure A2.14

Analysis

I analyzed the data using an ordered logistic regression. I regressed responses to this question on the three factors, with random intercepts and slopes for subject and site. Note that the interactions were not analyzed because the goal was to compare which factor most contributed to the concept of lying, and interactions render such comparisons uninterpretable.

Table A2.10 displays the posterior estimates for each effect. pd is the proportion of the posterior greater than 0 and % in ROPE is the proportion of the posterior in the Region of Practical Equivalence, which is the range of values similar enough to 0 as to be "practically equivalent" to

it. When a parameter's distribution is mostly out of this region, we can conclude there is an effect, while if the distribution is mostly in this region, we can conclude there is no effect. The distribution being in and out of the region means we cannot conclude either way. Here, the ROPE is -0.18 to 0.18.

Effect	Median	90% HDI	pd	% in ROPE
S intended to deceive	2.08	1.67, 2.47	100	0.00
p is false	1.16	0.88, 1.42	100	0.00
S believes p is false	0.78	0.55, 1.02	100	0.00

Table A2.10

Figure A2.16 plots the posterior distribution of each effect on the insincere response. The dashed line indicates the ROPE.
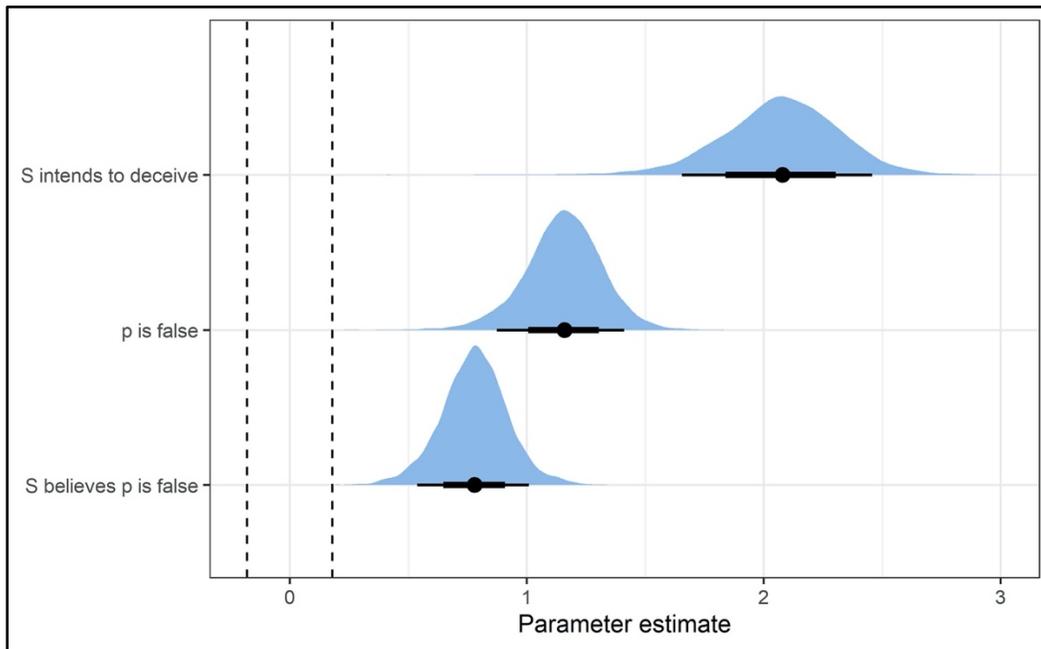
Figure A2.15

Table A2.11 displays the posterior estimates of the comparisons between each parameter; that is, values are computed from the difference between Effect 1 and Effect 2 across the posterior.

Effect 1	Effect 2	Median	90 % HDI	pd	% in ROPE
Intent	False	0.92	0.46, 1.36	99.7	0.60
Intent	Belief	1.30	0.88, 1.73	100	0.00
False	Belief	0.38	0.08, 0.66	97.6	12.2

Table A2.11

Figure A2.17 plots the posterior distributions of the comparisons.
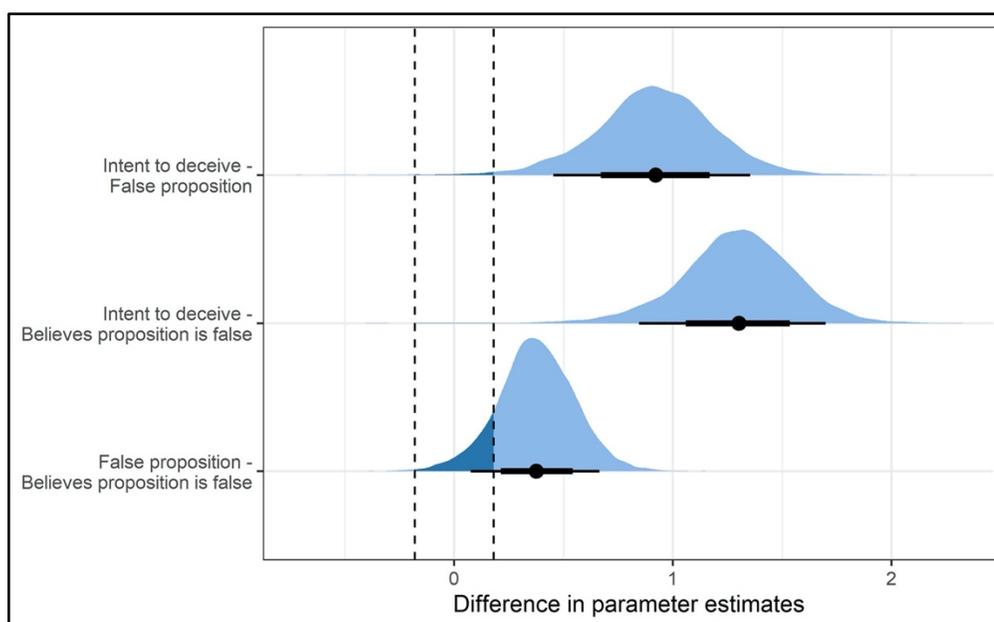
Figure A2.16

Figure A2.18 plots the predicted fit of the model, with the x-axis being the response categories and the y-axis the probability of responding with a given category. Each line a separate draw from the posterior; more solid areas indicating more overlap means more probable values. Overlaid atop the predicted fits is the proportion of observed responses within each response category. This allows us to examine how well the model fits the data.
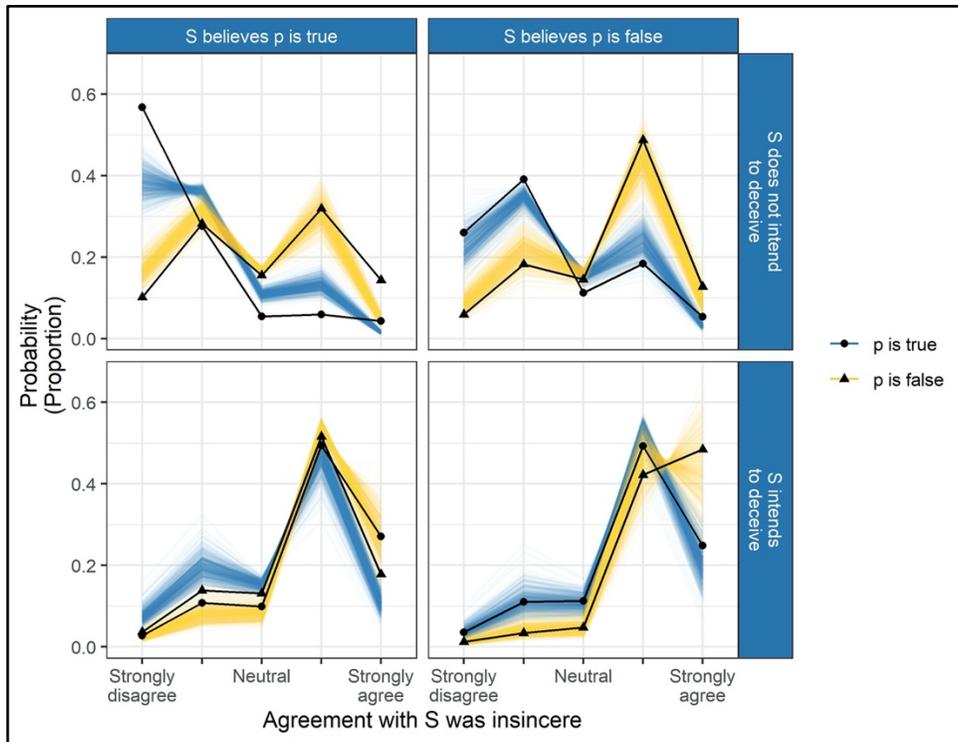
Figure A2.17

Variation across samples

Table A2.12 displays the slopes for each effect for each country. Notably, with the exception of Shipibo, there are large, robust effects for each parameter in each country.

Sample / population	Effect	Median	95% HDI	pd	% in ROPE
AFRIKAANS	Belief	0.65	0.41, 0.88	100	0.00
AFRIKAANS	Falsity	1.29	1.03, 1.53	100	0.00
AFRIKAANS	Intent	2.44	2.13, 2.78	100	0.00
CHINA	Belief	0.48	0.31, 0.66	100	0.00
CHINA	Falsity	0.73	0.54, 0.92	100	0.00
CHINA	Intent	2.04	1.81, 2.27	100	0.00
ECUADOR	Belief	1.07	0.82, 1.32	100	0.00
ECUADOR	Falsity	1.67	1.39, 1.93	100	0.00
ECUADOR	Intent	2.20	1.89, 2.55	100	0.00
isiZULU	Belief	0.74	0.49, 0.99	100	0.00
isiZULU	Falsity	1.58	1.31, 1.85	100	0.00
isiZULU	Intent	1.96	1.65, 2.31	100	0.00
JAPAN	Belief	0.41	0.16, 0.65	99.7	6.70
JAPAN	Falsity	0.55	0.28, 0.81	100	0.00
JAPAN	Intent	2.98	2.65, 330	100	0.00
KOREA	Belief	0.97	0.72, 1.20	100	0.00
KOREA	Falsity	1.15	0.89, 1.41	100	0.00
KOREA	Intent	1.66	1.35, 1.99	100	0.00
MOROCCO	Belief	0.80	0.58, 1.02	100	0.00
MOROCCO	Falsity	1.28	1.04, 1.52	100	0.00
MOROCCO	Intent	2.47	2.19, 2.78	100	0.00
PERU	Belief	1.40	1.15, 1.66	100	0.00
PERU	Falsity	1.57	1.31, 1.83	100	0.00
PERU	Intent	2.60	2.27, 2.92	100	0.00
SHIPIBO	Belief	0.24	-0.07, 0.53	91.4	35.3
SHIPIBO	Falsity	0.36	0.06, 0.69	97.0	16.6
SHIPIBO	Intent	0.23	-0.16, 0.63	82.1	37.5
SLOVAK	Belief	0.94	0.80, 1.09	100	0.00
SLOVAK	Falsity	1.52	1.38, 1.68	100	0.00
SLOVAK	Intent	2.38	2.19, 2.55	100	0.00
UKRAINE	Belief	0.71	0.58, 0.86	100	0.00
UKRAINE	Falsity	1.58	1.42, 1.72	100	0.00
UKRAINE	Intent	2.55	2.36, 2.73	100	0.00
USA	Belief	1.44	1.19, 1.67	100	0.00
USA	Falsity	1.16	0.90, 1.40	100	0.00
USA	Intent	300	2.68, 3.29	100	0.00

Table A2.12

Figure A2.19 plots the parameter coefficient for each effect by sample. That is, this is the estimates from posterior distributions of the main effect + the posterior distribution of the country's slope.
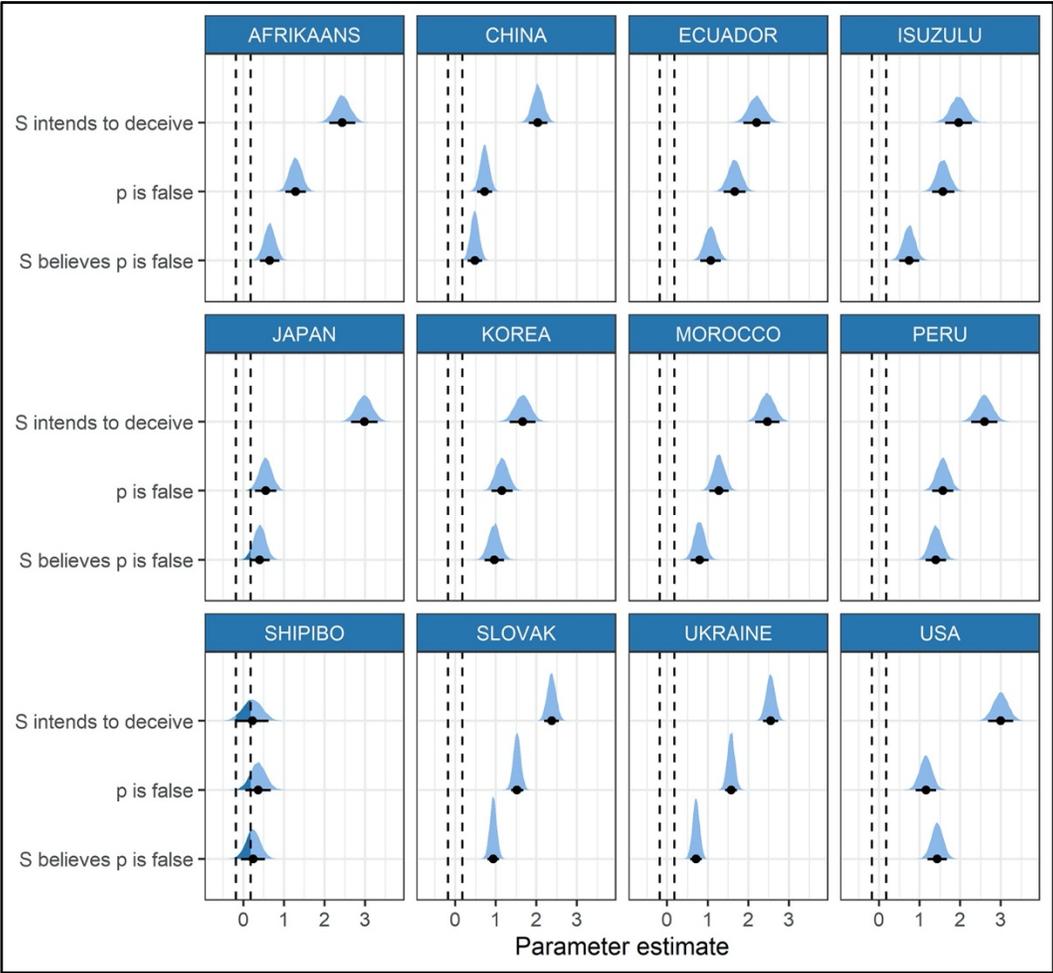
Figure A2.18

Figure A2.20 displays the posterior distribution of the difference between each parameter by each sample.
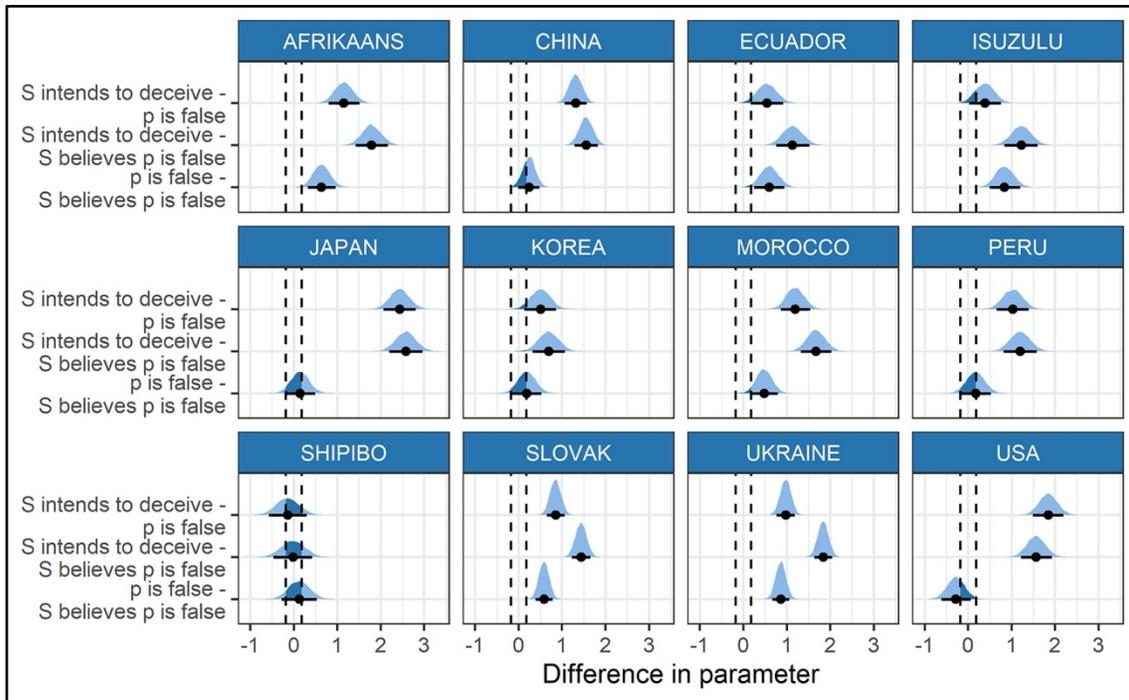
Figure A2.19

Finally, Figure A2.21 plots the order and proportions for each scenario by country.
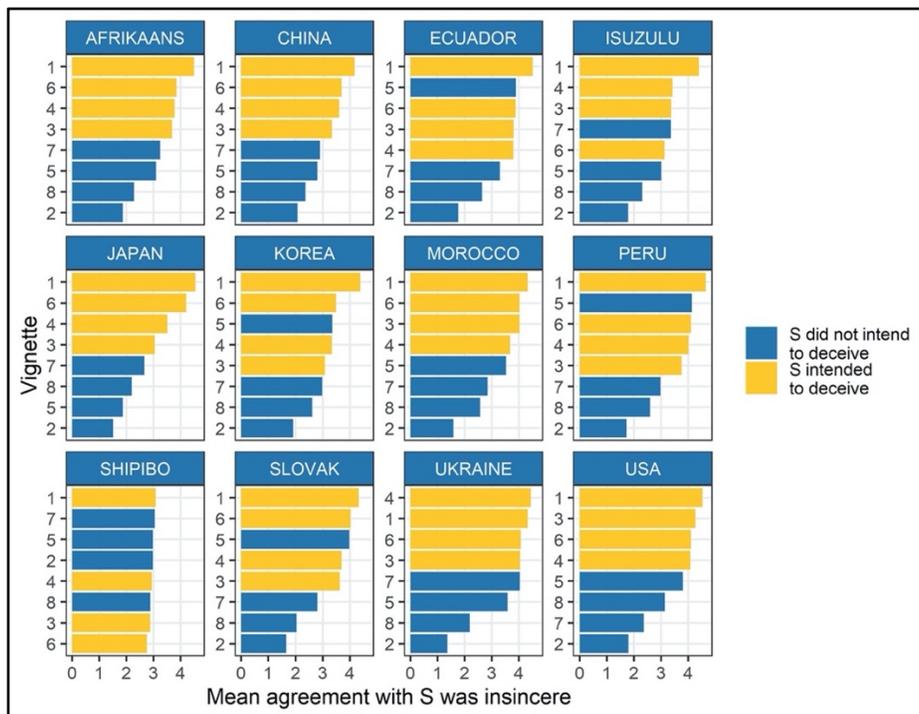
Figure A2. 20

4. ATTRIBUTION OF "INTENT TO DECEIVE"

Participants and observations

After dropping incomplete responses, there were n = 1307 participants who provided a total of N = 10446 responses. Table A2.13 displays the number of participants (n) and the number of observations (N) from each sample.

Site / Population	n	N
AFRIKAANS	73	584
CHINA	141	1128
ECUADOR	71	568
ISUZULU	72	576
JAPAN	76	608
KOREA	70	560
MOROCCO	83	664
PERU	77	616
SHIPIBO	50	400
SLOVAK	251	1999
UKRAINE	250	2000
USA	93	744

Table A2.13

Design

Here, we focus on the statement, "S had the intention to deceive". Figure A2.22 is a histogram of responses by each condition.
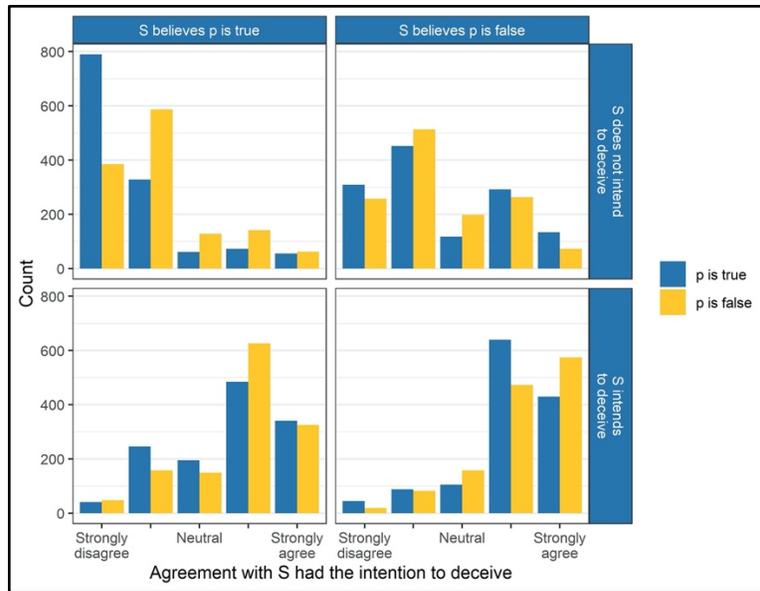
Figure A2.21

Analysis

I analyzed the data using an ordered logistic regression. I regressed responses to this question on the three factors, with random intercepts and slopes for subject and site. Note that the interactions were not analyzed because the goal was to compare which factor most contributed to the concept of lying, and interactions render such comparisons uninterpretable.

Table A2.14 displays the posterior estimates for each effect. pd is the proportion of the posterior greater than 0 and % in ROPE is the proportion of the posterior in the Region of Practical Equivalence, which is the range of values similar enough to 0 as to be "practically equivalent" to it. When a parameter's distribution is mostly out of this region, we can conclude there is an effect, while if the distribution is mostly in this region, we can conclude there is no effect. The distribution being in and out of the region means we cannot conclude either way. Here, the ROPE is -0.18 to 0.18.

Effect	Median	90% HDI	pd	% in ROPE
S intended to deceive	2.62	2.07, 3.14	100	0.00
p is false	0.44	0.22, 0.67	99.8	3.00
S believes p is false	0.98	0.76, 1.19	100	0.00

Table A2.14

Figure A2.23 plots the posterior distribution of each effect on the intent response. The dashed line indicates the ROPE.
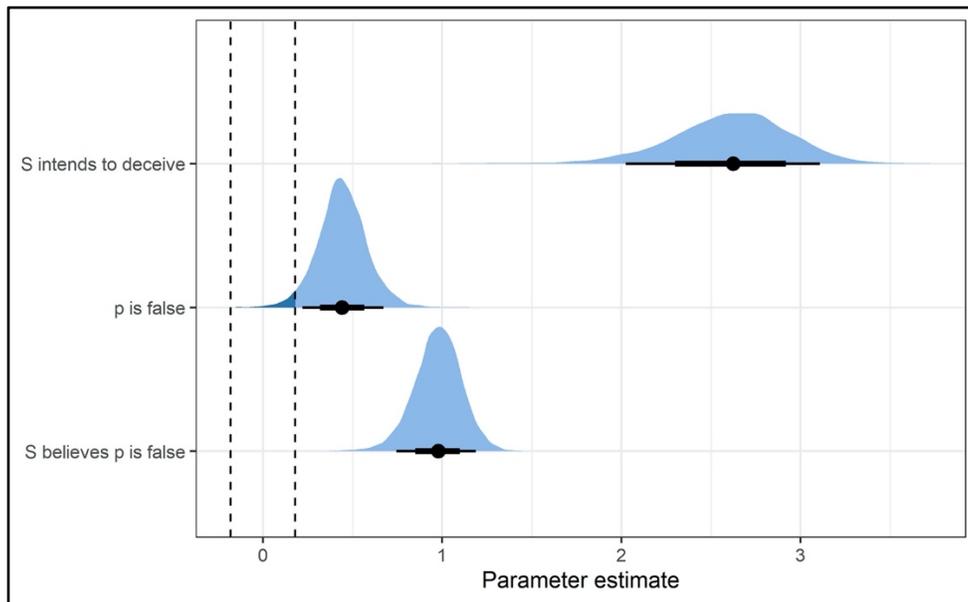
Figure A2.22

Table A2.15 displays the posterior estimates of the comparisons between each parameter; that is, values are computed from the difference between Effect 1 and Effect 2 across the posterior.

Effect 1	Effect 2	Median	90 % HDI	pd	% in ROPE
Intent	False	2.18	1.57, 2.78	100	0.00
Intent	Belief	1.65	1.19, 2.08	100	0.00
False	Belief	-0.54	-0.83, -0.23	0.7	3.40

Table A2.15

Figure A2.24 plots the posterior distributions of the comparisons.
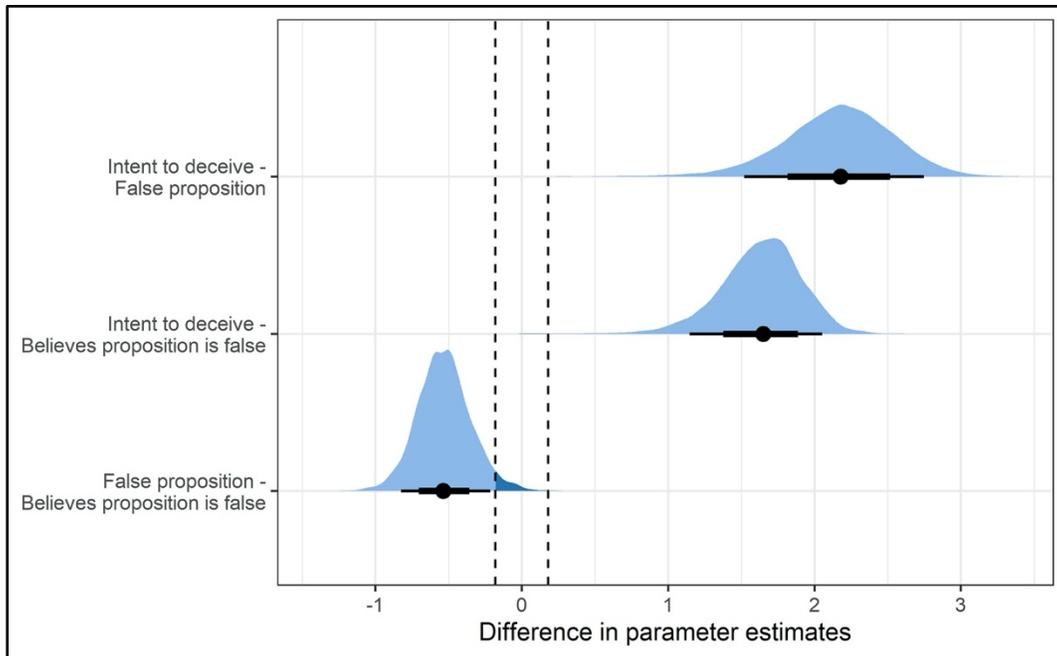
Figure A2.23

Figure A2.25 plots the predicted fit of the model, with the x-axis being the response categories and the y-axis the probability of responding with a given category. Each line a separate draw from the posterior; more solid areas indicating more overlap means more probable values. Overlaid atop the predicted fits is the proportion of observed responses within each response category. This allows us to examine how well the model fits the data.
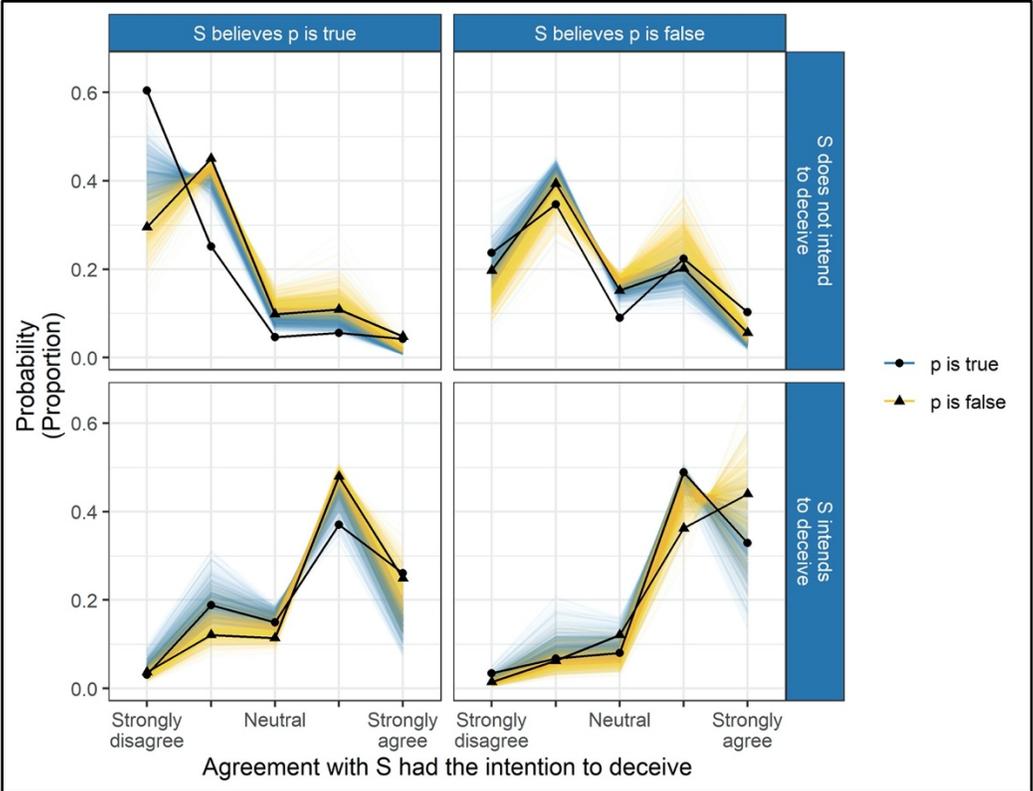
Figure A2.24

Variation across samples

Table A2.16 displays the slopes for each effect for each country. Notably, with the exception of Shipibo, there are large, robust effects for each parameter in each country.

Sample / population	Effect	Median	95% HDI	pd	% in ROPE
AFRIKAANS	Belief	1.05	0.82, 1.29	100	0.00
AFRIKAANS	Falsity	0.66	0.41, 0.90	100	0.00
AFRIKAANS	Intent	2.74	2.37, 3.10	100	0.00
CHINA	Belief	0.74	0.57, 0.92	100	0.00
CHINA	Falsity	0.55	0.37, 0.72	100	0.00
CHINA	Intent	2.36	2.09, 2.63	100	0.00
ECUADOR	Belief	1.36	1.12, 1.62	100	0.00
ECUADOR	Falsity	0.57	0.32, 0.83	100	0.00
ECUADOR	Intent	3.14	2.77, 3.54	100	0.00
isiZULU	Belief	1.02	0.76, 1.28	100	0.00
isiZULU	Falsity	1.22	0.94, 1.51	100	0.00
isiZULU	Intent	2.08	1.69, 2.45	100	0.00
JAPAN	Belief	1.38	1.12, 1.64	100	0.00
JAPAN	Falsity	0.23	-0.02, 0.48	93.3	37.2
JAPAN	Intent	3.91	3.53, 4.29	100	0.00
KOREA	Belief	0.90	0.68, 1.15	100	0.00
KOREA	Falsity	0.48	0.23, 0.71	99.9	2.2
KOREA	Intent	2.45	2.07, 2.80	100	0.00
MOROCCO	Belief	0.98	0.73, 1.21	100	0.00
MOROCCO	Falsity	-0.08	-0.31, 0.17	29.7	70.7
MOROCCO	Intent	3.53	3.17, 3.88	100	0.00
PERU	Belief	1.47	1.22, 1.73	100	0.00
PERU	Falsity	0.29	0.04, 0.54	69.9	23.6
PERU	Intent	3.72	3.35, 4.10	100	0.00
SHIPIBO	Belief	0.18	-012, 0.48	82.9	48.1
SHIPIBO	Falsity	0.09	-0.24, 0.39	67.6	61.4
SHIPIBO	Intent	0.16	-0.28, 0.62	72.9	42.2
SLOVAK	Belief	1.04	0.89, 1.17	100	0.00
SLOVAK	Falsity	0.46	0.32, 0.60	100	0.00
SLOVAK	Intent	3.28	3.07, 3.49	100	0.00
UKRAINE	Belief	0.88	0.75, 1.02	100	0.00
UKRAINE	Falsity	0.40	0.26, 0.54	100	0.50
UKRAINE	Intent	3.29	3.07, 3.48	100	0.00
USA	Belief	1.66	1.40, 1.91	100	0.00
USA	Falsity	0.33	0.09, 0.58	98.8	15.0
USA	Intent	4.14	3.81, 4.51	100	0.00

Table A2.16

Figure A2.26 plots the parameter coefficient for each effect by sample. That is, this is the estimates from posterior distributions of the main effect + the posterior distribution of the country's slope.
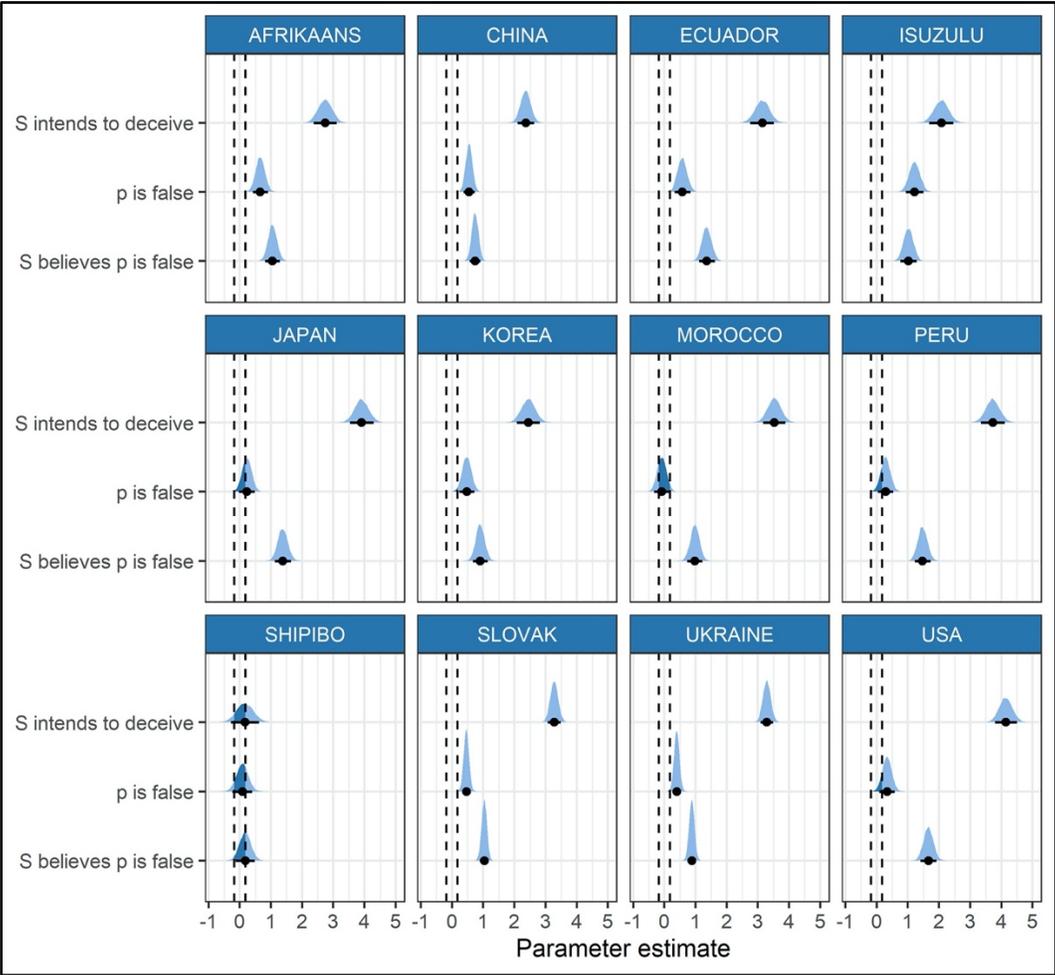
Figure A2.25

Figure A2.27 displays the posterior distribution of the difference between each parameter by each sample.
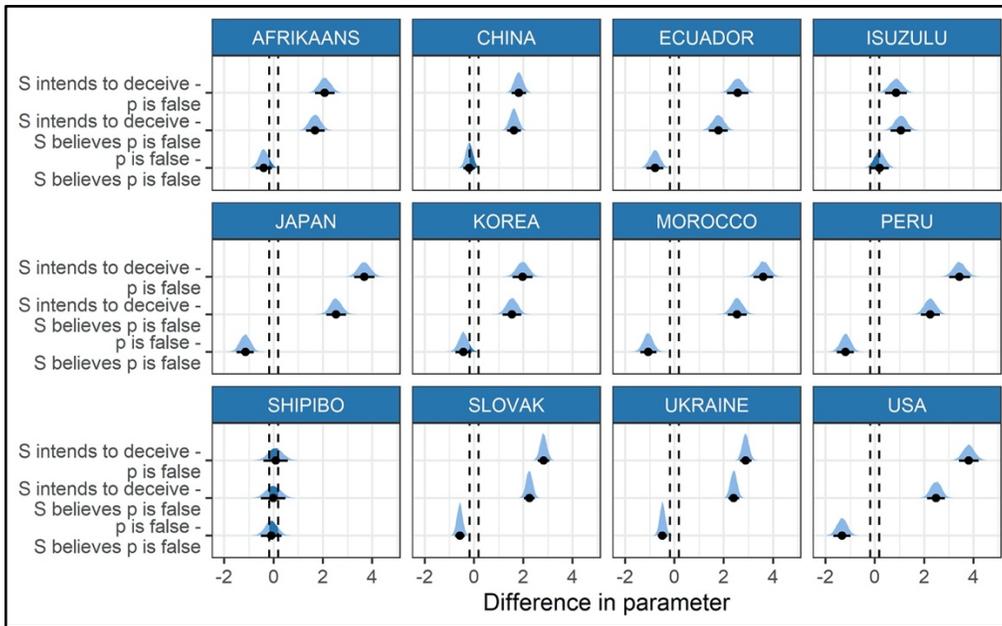
Figure A2.26

Finally, Figure A2.28 plots the order and proportions for each scenario by country.

Figure A2.27

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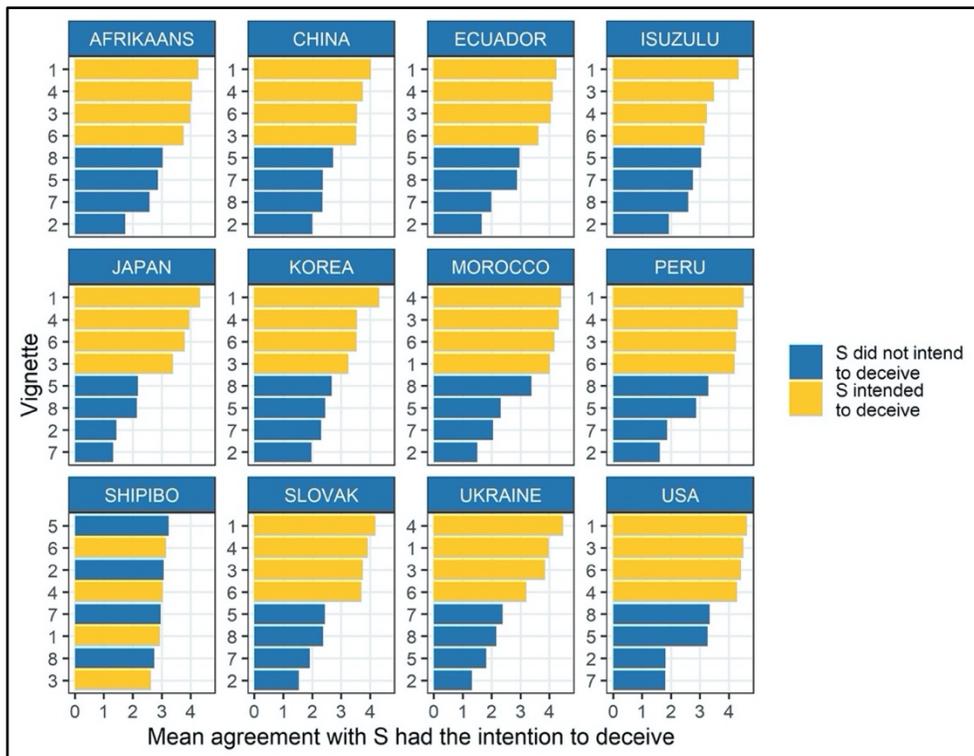
5. ATTRIBUTION OF "TELLING A LIE"

Participants and observations

After dropping incomplete responses, there were n = 1307 participants who provided a total of N = 10445 responses. Table A2.17 displays the number of participants (n) and the number of observations (N) from each sample.

Site / Population	n	N
AFRIKAANS	73	584
CHINA	141	1128
ECUADOR	71	568
ISUZULU	72	576
JAPAN	76	608
KOREA	70	560
MOROCCO	83	664
PERU	77	616
SHIPIBO	50	400
SLOVAK	251	1998
UKRAINE	250	1999
USA	93	744

Table A2.17

Design

Here, we focus on the statement, "S told a lie." Figure A2.29 is a histogram of responses by each condition.
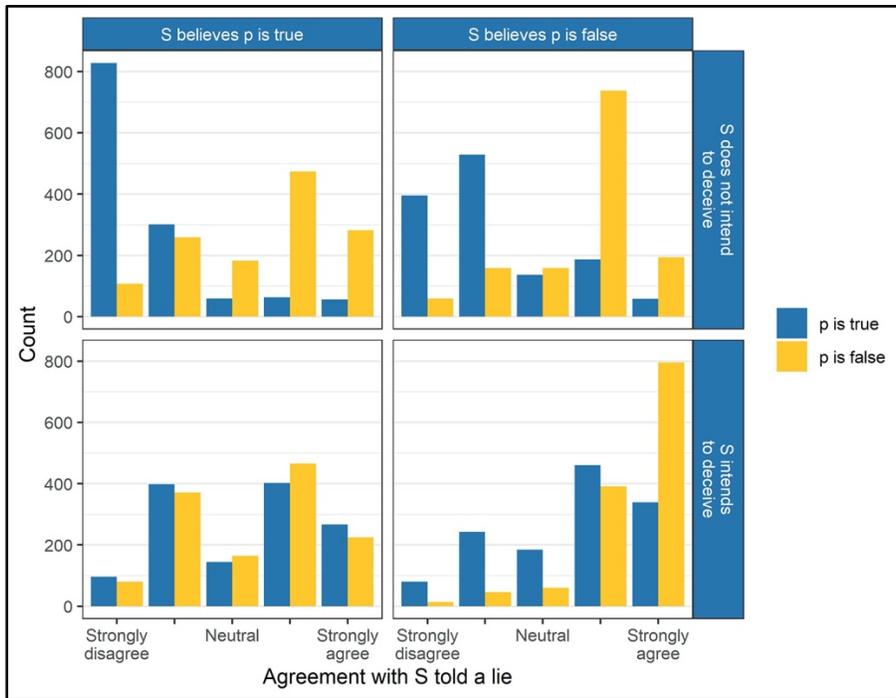
Figure A2.28

Analysis

I analyzed the data using an ordered logistic regression. I regressed responses to this question on the three factors, with random intercepts and slopes for subject and site. Note that the interactions were not analyzed because the goal was to compare which factor most contributed to the concept of lying, and interactions render such comparisons uninterpretable.

Table A2.18 displays the posterior estimates for each effect. pd is the proportion of the posterior greater than 0 and % in ROPE is the proportion of the posterior in the Region of Practical Equivalence, which is the range of values similar enough to 0 as to be "practically equivalent" to it. When a parameter's distribution is mostly out of this region, we can conclude there is an effect, while if the distribution is mostly in this region, we can conclude there is no effect. The distribution being in and out of the region means we cannot conclude either way. Here, the ROPE is -0.18 to 0.18.

Effect	Median	90% HDI	pd	% in ROPE
S intended to deceive	1.53	1.18, 1.84	100	0.00
p is false	1.65	1.36, 1.94	100	0.00
S believes p is false	0.98	0.75, 1.19	100	0.00

Table A2.18

Figure A2.30 plots the posterior distribution of each effect on the told lie response. The dashed

line indicates the ROPE.
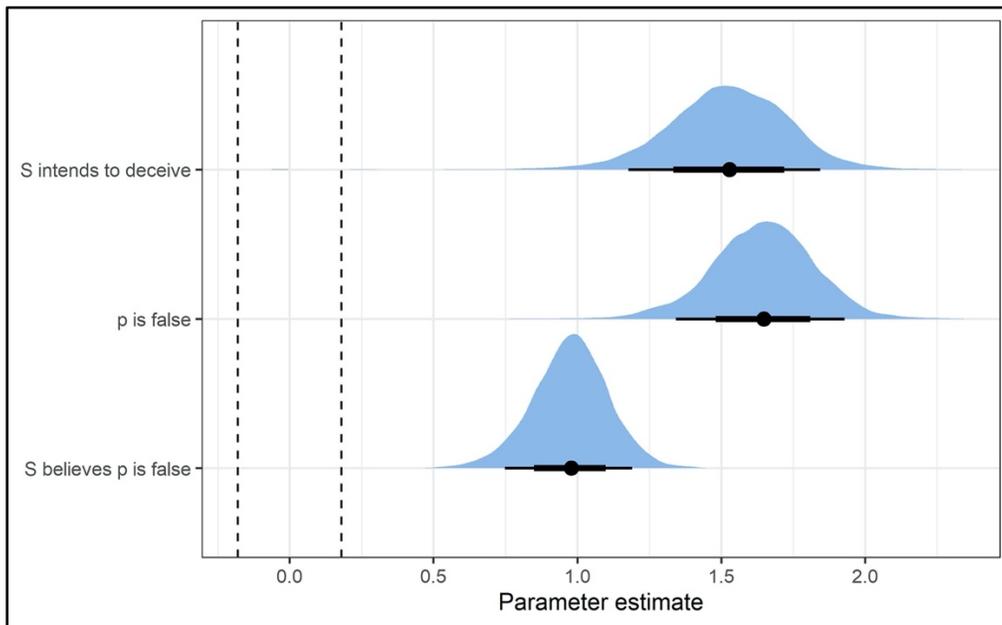
Figure A2.29

Table A2.19 displays the posterior estimates of the comparisons between each parameter; that is,

values are computed from the difference between Effect 1 and Effect 2 across the posterior.

Effect 1	Effect 2	Median	90 % HDI	pd	% in ROPE
Intent	False	-0.12	-0.51, 0.27	29.4	50.9
Intent	Belief	0.55	0.22, 0.88	99.2	3.70
False	Belief	0.67	0.37, 0.93	99.9	0.60

Table A2.19

Figure A2.31 plots the posterior distributions of the comparisons.
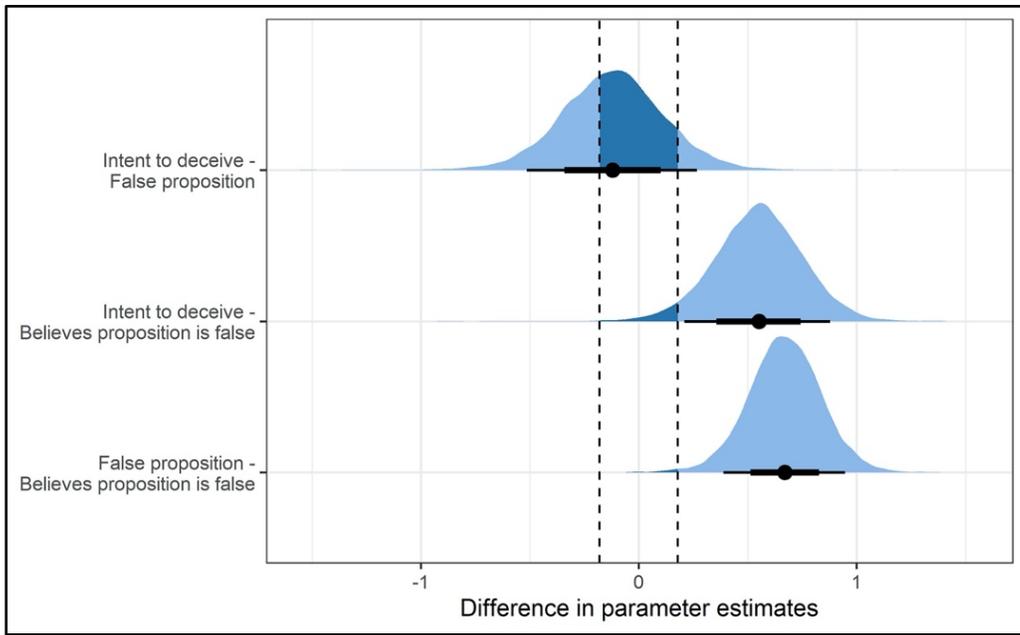
Figure A2.30

Figure A2.32 plots the predicted fit of the model, with the x-axis being the response categories and the y-axis the probability of responding with a given category. Each line a separate draw from the posterior; more solid areas indicating more overlap means more probable values. Overlaid atop the predicted fits is the proportion of observed responses within each response category. This allows us to examine how well the model fits the data.
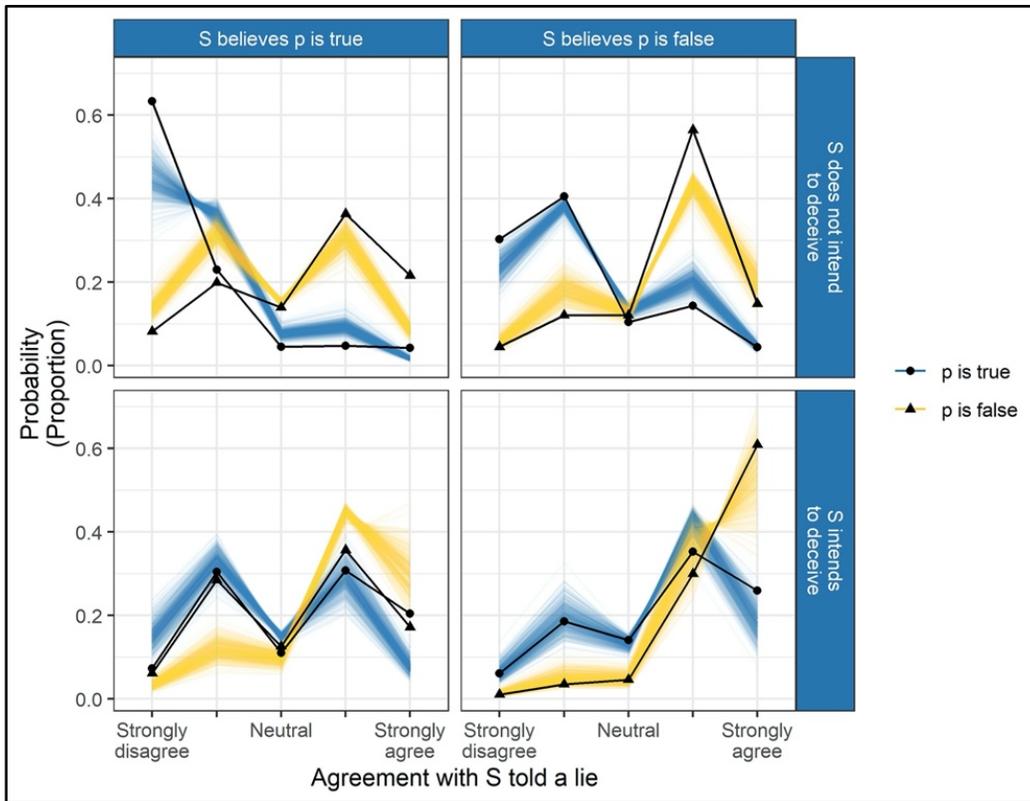
Figure A2.31

Variation across samples

Table A2.20 displays the slopes for each effect for each country. Notably, with the exception of Shipibo, there are large, robust effects for each parameter in each country.

Sample / population	Effect	Median	95% HDI	pd	% in ROPE
AFRIKAANS	Belief	1.10	0.86, 1.34	100	0.00
AFRIKAANS	Falsity	1.85	1.56, 2.13	100	0.00
AFRIKAANS	Intent	2.03	1.74, 2.32	100	0.00
CHINA	Belief	0.94	0.77,1.12	100	0.00
CHINA	Falsity	1.44	1.23, 1.64	100	0.00
CHINA	Intent	1.15	0.93, 1.34	100	0.00
ECUADOR	Belief	1.09	0.83, 1.33	100	0.00
ECUADOR	Falsity	2.24	1.95, 2.53	100	0.00
ECUADOR	Intent	1.49	1.21, 1.79	100	0.00
isiZULU	Belief	0.89	0.63, 1.15	100	0.00
isiZULU	Falsity	1.84	1.55, 2.14	100	0.00
isiZULU	Intent	1.57	1.27, 1.87	100	0.00
JAPAN	Belief	1.18	0.93, 1.41	100	0.00
JAPAN	Falsity	2.17	1.87, 2.44	100	0.00
JAPAN	Intent	1.75	1.46, 2.03	100	0.00
KOREA	Belief	0.92	0.68, 1.17	100	0.00
KOREA	Falsity	1.29	1.00, 1.56	100	0.00
KOREA	Intent	1.22	0.92, 1.49	100	0.00
MOROCCO	Belief	0.76	0.53, 0.99	100	0.00
MOROCCO	Falsity	1.13	0.86, 1.40	100	0.00
MOROCCO	Intent	2.31	2.04, 2.58	100	0.00
PERU	Belief	150	1.24, 1.74	100	0.00
PERU	Falsity	2.13	1.84, 2.41	100	0.00
PERU	Intent	1.63	1.34, 1.91	100	0.00
SHIPIBO	Belief	-0.03	-0.33, 0.27	44.2	67.8
SHIPIBO	Falsity	0.21	-0.13, 0.55	84.8	41.0
SHIPIBO	Intent	0.26	-0.08, 0.59	89.7	34.1
SLOVAK	Belief	0.93	0.79, 1.08	100	0.00
SLOVAK	Falsity	2.20	2.05, 2.37	100	0.00
SLOVAK	Intent	1.34	1.19, 1.50	100	0.00
UKRAINE	Belief	1.38	1.23, 1.53	100	0.00
UKRAINE	Falsity	2.06	1.88, 2.23	100	0.00
UKRAINE	Intent	2.62	2.44, 1.79	100	0.00
USA	Belief	1.62	1.39, 1.86	100	0.00
USA	Falsity	1.97	1.70, 2.22	100	0.00
USA	Intent	1.97	1.70, 2.23	100	0.00

Table A2.20

Figure A2.33 plots the parameter coefficient for each effect by sample. That is, this is the estimates from posterior distributions of the main effect + the posterior distribution of the country's slope.
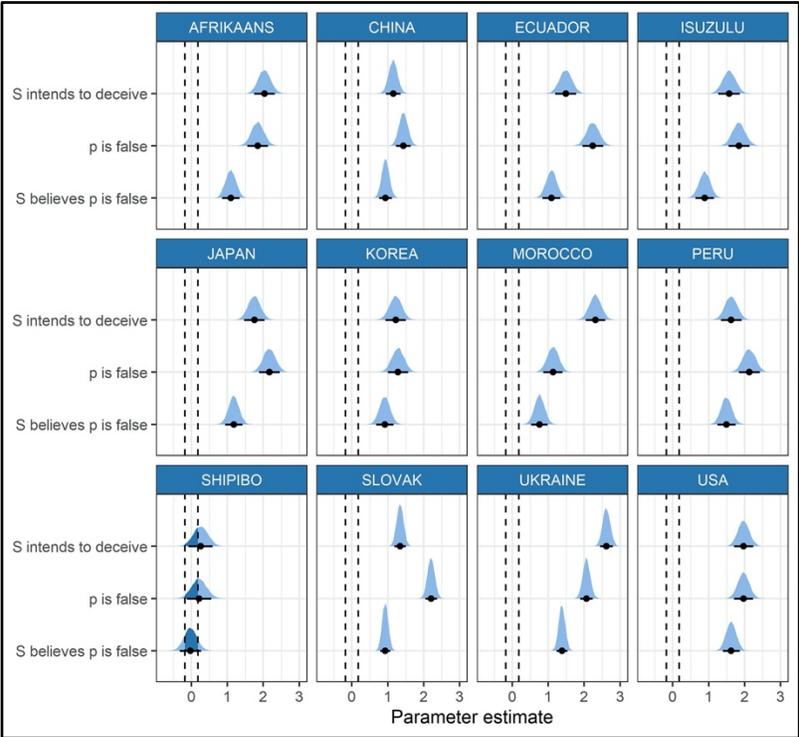
Figure A2.32

Figure A2.34 displays the posterior distribution of the difference between each parameter by each sample.
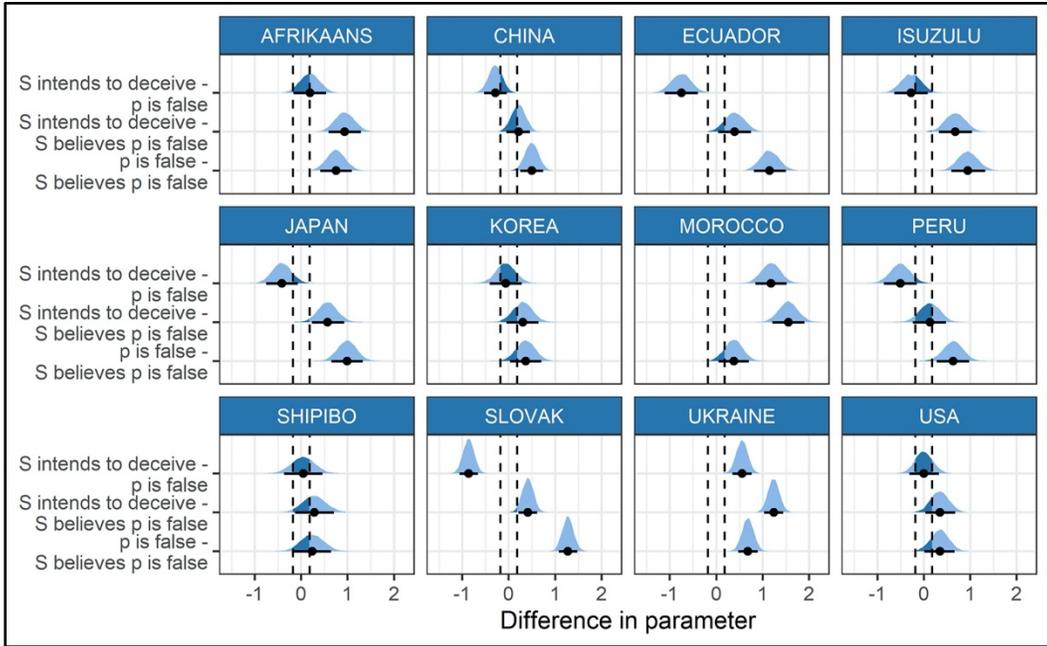
Figure A2.33

Finally, Figure A2.35 plots the order and proportions for each scenario by country.
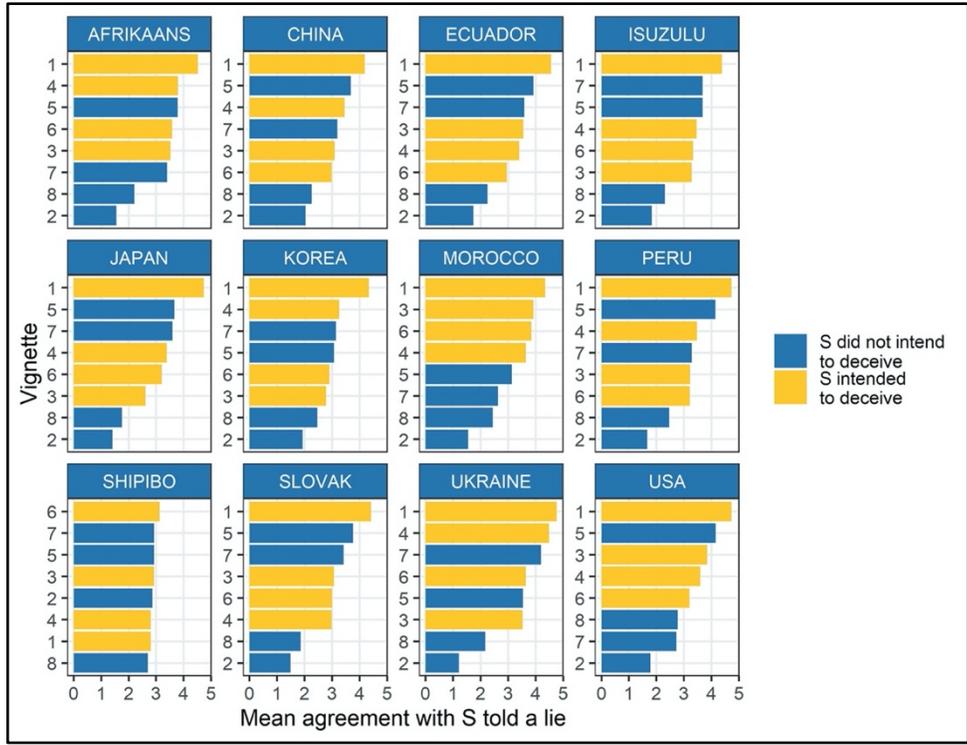
Figure A2.34

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