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**Citation for published version (APA):**
Bereby-Meyer, Y., Hayakawa , S., Shalvi, S., Corey , J. D., Costa, A., & Keysar, B. (2020). Honesty Speaks a Second Language. *Topics in Cognitive Science*, *12*(2), 632-643. https://doi.org/10.1111/tops.12360

This article is part of the topic "Lying," Hans van Ditmarsch, Petra Hendriks and Rineke Verbrugge (Topic Editors). For a full listing of topic papers, see http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1756-8765/earlyview

# Honesty Speaks a Second Language

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## Abstract

Theories of dishonest behavior implicitly assume language independence. Here, we investigated this assumption by comparing lying by people using a foreign language versus their native tongue. Participants rolled a die and were paid according to the outcome they reported. Because the outcome was private, they could lie to inflate their profit without risk of repercussions. Participants performed the task either in their native language or in a foreign language. With native speakers of Hebrew, Korean, Spanish, and English, we discovered that, on average, people inflate their earnings less when they use a foreign language. The outcome is explained by a dual system account that suggests that self-serving dishonesty is an automatic tendency, which is supported by a fast and intuitive system. Because using a foreign language is less intuitive and automatic, it might engage more deliberation and reduce the temptation to lie. These findings challenge theories of ethical behavior to account for the role of the language in shaping ethical behavior.

*Keywords:* Decision-making; Behavioral economics; Honesty; Deliberation; Language

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[Correction added on October 22, 2018, after initial online publication: The Topic Editor name in the topic title was changed from "Hans van Distmarsch" to "Hans van Ditmarsch".]

## 1. Introduction

Imagine yourself visiting a zoo with your kids. You ask the cashier from what age they charge admission for children. You are told that children older than three should have a ticket. The cashier asks how old your kids are. Your younger child just had his third birthday, and you are tempted to provide a less than accurate answer. What would you say? Would it be different if you respond in a foreign language compared to in your native tongue?

Understanding how people make ethical decisions carries important implications for individuals and society (Bazerman & Tenbrunsel, 2011). Here we consider the role of something that may not seem relevant to honesty, the language one uses to communicate. Whereas our choices seem independent of the language in which we make them, recent research suggests that the language we use shapes our decisions. Specifically, people's choices are different when they use their native tongue as opposed to a foreign language (e.g., Costa, Foucart, Arnon, Aparici, & Apesteguia, 2014; Costa, Foucart, Hayakawa, et al., 2014; Keysar, Hayakawa, & An, 2012). If the language used also affects people's honesty, it would be important in two ways. First, it could provide new insights about why and when people lie. Second, people routinely use foreign languages for work, commerce, studying, or travel. Therefore, understanding how a foreign language relates to ethical standards and behavior could have important implications for society. The experiments we report here investigate how language affects honesty.

### 1.1. Deliberation and ethical behavior

According to a dual system approach, decisions in general and ethical choices in particular result from the interplay between affective (system 1) and deliberative (system 2) processes. The affective system is described as fast, automatic, associative, and emotionally charged, and it is assumed to require minimal cognitive resources. In contrast, the deliberative system is slow, deliberately controlled, analytical, affect–free, and requires cognitive resources (Evans, 2008; Kahneman & Frederick, 2002; Stanovich, 1999).

Recent work suggests that in tempting situations, honesty is promoted by the deliberate, analytical system. The opportunity to profit from dishonesty creates a conflict between the temptation to lie for selfish gain and the desire to act ethically. The ability to resist temptation requires self-control, which is thought to be promoted by the deliberate system. Indeed, people lie more when cognitive resources are depleted (Gino, Schweitzer, Mead, & Ariely, 2011; Mead, Baumeister, Gino, Schweitzer, & Ariely, 2009; Muraven, Pogarsky, & Shmueli, 2006). Similarly, sleep-deprived people have difficulty seeing the moral implications of their unethical behavior (Barnes, Gunia, & Wagner, 2015; Barnes, Schaubroeck, Huth, & Ghumman, 2011). In other research, soldiers were found to lie more at the end of the week compared to earlier days of the work week, potentially reflecting a reduction in self-control resources over time (Ruffle & Tobol, 2014). Restricting self-control through time pressure also increases lying in the service of

self-interest (Shalvi, Eldar, & Bereby-Meyer, 2012). Accordingly, it has been found that contemplation promotes ethical decisions, while immediate choice promotes unethical behavior (Gunia, Wang, Huang, Wang, & Murnighan, 2012). In tempting situations, honesty seems to require that deliberate processes override emotional ones.

But self-interest is not always the intuitive response. Recent studies show that in social dilemmas, such as the public goods and the prisoner's dilemma games, cooperation is the intuitive response (e.g., Rand, Greene, & Nowak, 2012). Similarly, depleted participants rejected more unfair offers in the ultimatum game and were also more willing to reciprocate generous offers in the trust game, compared to non-depleted participants, even if doing so was costly for them (Halali, Bereby-Meyer, & Meiran, 2014). Importantly, the prosocial considerations in these settings were tested in conditions that involve explicit social exchange. Thus, the presence of explicit social consequences within a given context may be a moderating variable in establishing the dominant and intuitive response. Along this line of thought, Pitesa, Thau, and Pillutla (2013) suggested that the dominant impulse is to behave in a socially desirable manner when the interpersonal impact of an action is salient, and that the dominant impulse is to behave in a self-serving manner when the interpersonal impact of an action is not salient. Their theory suggests that the salience of interpersonal impact activates other-regarding impulses by directing people's focus on the impact of their actions on others. With regard to dishonest behavior, they found that when the impact of the dishonest behavior on others was not salient, depletion of cognitive resources led to significantly more lying than when sufficient resources remained to rely on the deliberative system. However, when the impact of the dishonest behavior on others was salient, depletion of cognitive resources led to significantly less lying than when cognitive resources were not depleted (Study 3).

There is reason to believe that temptation might not be language-independent. The use of our native language is intuitive and emotion-laden, which is consistent with the operation of the intuitive and automatic system, while a foreign language is processed much less affectively. Because a foreign language is learned relatively late in life and tends to be acquired in a more formal setting, it carries less emotional meaning than a native tongue (Caldwell-Harris & Ayçiçeği-Dinn, 2009; Ivaz, Costa, & Duñabeitia, 2016). For example, both self-ratings and electro-dermal responses demonstrate that people are less aroused by emotionally laden expressions such as childhood reprimands or taboo words in a foreign language compared to their native tongue (Colbeck & Bowers, 2012; Dewaele, 2004; Harris, Ayçiçegi, & Gleason, 2003; Iacozza, Costa, & Duñabeitia, 2017). Furthermore, processing a foreign language is typically less automatic than processing a native language, and this could lead to more deliberate processing (Favreau & Segalowitz, 1983).

The less emotional nature of a foreign language leads to a reduction in heuristic biases that are typically associated with an emotional reaction (Costa, Foucart, Arnon, et al., 2014; Keysar et al., 2012, for reviews see Costa, Vives, & Corey, 2017; Hayakawa, Costa, Foucart, & Keysar, 2016). Accordingly, people resolve moral dilemmas less emotionally in a foreign language, leading to more utilitarian choices (Cipolletti, McFarlane, & Weissglass, 2016; Corey et al., 2017; Costa, Foucart, Hayakawa, et al., 2014; Geipel, Hadjichristidis, & Surian, 2015; Hayakawa, Tannenbaum, Costa, Corey, & Keysar, 2017).

In the current research, we examine dishonest behavior when the impact of lying to others is not salient. Since in such contexts, the temptation to act unethically in self-serving ways seems to be the intuitive, affective response, relying less on the intuitive system should lead to increased honesty. If using a foreign language reduces reliance on the affective system, then a dual-system account predicts that using a foreign language would promote honesty in contexts where the social consequences are not explicit.

We conducted four studies that assess the tendency to lie as a function of the nature of language. The studies differ in participants' native language—Hebrew, Korean, Spanish, and English. In all studies, participants privately rolled a six-sided die and earned money according to the outcome they reported. The higher the number they report, the higher their payment. As such, participants had an incentive and an opportunity to dishonestly inflate their report to make more money.

## 2. Method

### 2.1. Participants and procedure

The first two studies were run sequentially. The Israeli sample was run first, followed by the Korean sample. Subsequently, the Barcelona and Chicago studies were run simultaneously with Spanish as the native and English as the foreign language in the case of the former, and with English as the native and Spanish as the foreign language in the latter. Within each of the four studies, we recruited participants that had the same native language and the same foreign language. For example, the Israeli sample included participants who were all native Hebrew speakers who spoke English as a foreign language. The specific details for each study are listed in Table 1. A total of 1,475 participants participated in the studies (see Supporting Information for specific details regarding the definition of sample size and for specific exclusion criteria).

Table 1
Specific details for the different studies

| | Native/Foreign Language | | | |
|---|---|---|---|---|
| | Hebrew/English | Korean/English | Spanish/English | English/Spanish |
| Total *N* | 139 | 902 | 185 | 249 |
| *N* included (females) | 110 (not collected) | 441 (128)[a] | 176 (113) | 199 (123) |
| Setting | Laboratory (Israel) | Online | Laboratory (Spain) | Laboratory (U.S.A.) |
| Language proficiency mean rating | 90% | 6.17 Korean 5.11 English | 4.8 English | 6.92 English 4.51 Spanish |
| BMI negative α | 0.82 | Not measured | 0.75 | 0.73 |
| BMI positive α | 0.79 | | 0.80 | 0.71 |

*Note.* BMI, Brief Mood Introspection scale.
[a]A high number of participants were excluded mainly because 282 participants reported growing up speaking English at home and because 146 participants didn't pass the proficiency test.

Participants of each study were randomly assigned to complete the task either in their native tongue or the foreign language. The Israeli, Barcelona, and Chicago studies were run in the laboratory, while the Korean study was run online. The entire experiment was conducted in the assigned language, including reading the consent form and interacting with the experimenter.

Participants privately rolled a six-sided die three times, and then reported the number that came up on the *first* roll by selecting the corresponding number written as a word on the computer screen. We ensured that participants knew that the outcome of the three rolls was known only to them. In the laboratory experiments, participants rolled the die in an opaque cup, then peeked through a hole at the top to see the result. In the online experiment, participants had the option to roll their own physical die in the privacy of their home, or to roll a virtual die online on a site that was unaffiliated with the experimenter (http://www.roll-dice-online.com). We used this multiple-roll die methodology because it is an effective procedure to study lying, giving people the opportunity to stretch the truth by reporting the highest outcome they observed, rather than the one they saw on the first roll (Shalvi, Dana, Handgraaf, & De Dreu, 2011).

Participants received a show-up fee or extra course credit for participating in the experiment, with the exception of some of the participants in the Spanish experiment. In addition, they expected a bonus, which would correspond to their reported die roll outcome. For instance, if they reported rolling a 1, they would receive $1 (or €1, or 10NIS; per the relevant sample); if they reported rolling a 4, they would receive $4 (or €4, or 40NIS); and so on. In the Israeli sample only a few randomly selected participants received the bonus.

In the three laboratory experiments, we evaluated participants' mood using the Brief Mood Introspection (BMI) scale after participants completed the die rolling task (Mayer & Gaschke, 1988). They reported how they felt on eight negative items (e.g., sad) and eight positive items (e.g., happy) with the means serving as negative and positive mood indices.[1] We used the BMI scale to evaluate whether any language effect resulted from language-induced mood. For the online Korean participants, we also collected responses to the Rational-Experiential Inventory (REI; Pacini & Epstein, 1999), which was used to assess preferences for rational versus intuitive thinking styles. We assessed language proficiency in the foreign language and excluded participants who did not meet the required level of proficiency (see Supporting Information).

Given that only the participant saw the outcomes of the die roll, detecting individual lies was not possible. We evaluated lying at the group level by comparing the distribution of responses to outcomes expected by chance.

## 3. Results

We start by examining the distribution of reported dice outcomes in the different samples. Fig. 1 presents the percent of participants that reported each dice outcome for each study as a function of the type of language (native/foreign).
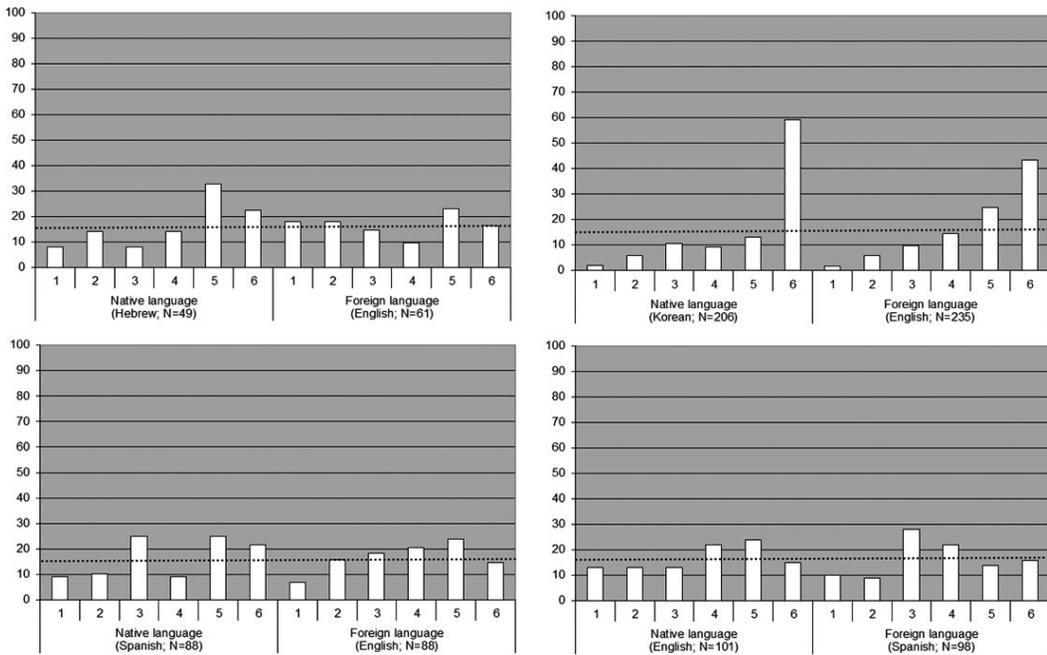
Fig. 1. Distributions of reported dice outcomes (in percentages) as a function of the type of language (native/foreign) for the different studies. The dashed line represents the percentages for each dice outcome that would be expected by chance (16.67%).

Fig. 1 shows in all studies that the proportion of reported 5's or 6's was higher in the native language condition compared to the foreign language condition, which indicates a tendency to inflate outcomes more in the native than in the foreign language.

As indicated in Table 2, except for the US study, participants in all other three studies lied to increase their profits when using their *native* language. The distributions of reported outcomes differed from the uniform distribution, which would be expected from fair rolls of the die in the three studies. However, with the foreign language, participants in the Israeli and Spanish studies did not lie. In other words, the distributions of reported outcomes did not differ from the uniform distribution. In the Korean study, participants

Table 2
$\chi^2(5)$ for comparisons to the uniform distribution for the four studies and the different types of language

|  | Native | Foreign |
|---|---|---|
| Hebrew | 13.08* | 3.43 |
| Korean | 278.02** | 164.96** |
| Spanish | 16.86** | 8.95 |
| English | 7.3 | 15.02* |

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

lied significantly in both languages, but they lied significantly less in the foreign language ($Z = -2.2$, $p < .03$).

To better understand the tendency to report higher outcomes in the native language, we conducted a linear regression with the reported outcome as the dependent variable. In the first step of this regression, we entered the type of language (0 = native, 1 = foreign) and the sample (coded with 3 dummy variables, using the US sample as the comparison group). In the second step we entered the interactions between sample and language (Native/Foreign). The analysis yielded no significant interactions. We thus report the results of the analysis for a model without interactions. The overall model was significant, $R^2 = 0.13$, $F(4,921) = 34.12$, $p < .001$, $N = 926$. Participants reported higher numbers in their native language than in a foreign language ($b = -0.21$, $t = -2.11$, $p = .035$).

Of lesser theoretical importance to the current investigation, the analysis further revealed that participants tended to report higher numbers in the Korean study compared to the English study ($b = 1.2$, $t = 9.4$, $p < .001$). Table 3 presents the mean reported outcomes for the different studies as a function of the type of language. Most likely, participants in this study lied more than in the other three studies because they took the study online. Taking the study online guarantees complete anonymity, which probably makes lying easier than when performing the task in the laboratory, surrounded by other students. Lastly, we evaluated whether language type affected participants' mood by analyzing the BMI scale measure (Mayer & Gaschke, 1988) that participants answered at the end of the task. We computed a negative affect score and a positive affect score, but found no significant differences as a function of the type of language (native/foreign; all $p$'s > .19 for the three samples in which the measure was used). See Supporting Information for the analysis of the REI test in the Korean study.

## 4. Discussion

Results of four samples, each using a different native language, converge to show that people lie less when they use a foreign language than their native tongue. The finding demonstrates that dishonesty is not language independent. Lying in the service of self-interest seems to be an automatic tendency, which people can overcome with deliberation (Gunia et al., 2012; Shalvi et al., 2012). Here deliberation seems to have been evoked by using a foreign language.

Table 3
Mean (*SD*) reported dice outcomes as a function of the type of language (native/foreign) for the different studies

|         | Native      | Foreign     |
|---------|-------------|-------------|
| Hebrew  | 4.16 (1.62) | 3.5 (1.78)  |
| Korean  | 5.03 (1.40) | 4.85 (1.33) |
| Spanish | 3.95 (1.62) | 3.83 (1.5)  |
| English | 3.78 (1.63) | 3.7 (1.51)  |

The discovery that people are more honest in a foreign language when the effect of their behavior on others is not salient is predicted by a dual-system account, but the exact process of how a foreign language promotes honesty remains unknown. One possibility is that because people using a foreign language process information more slowly than in the native language, they have more time to deliberate over their decisions and thus overcome the automatic tendency to lie. This is in line with Shalvi et al. (2012), who showed that people lie less with more time to deliberate.

Alternatively, the reduction in lying in a foreign language may be driven by dampening temptation. Greene and Paxton (2009) proposed that honesty may reflect a decrease in temptation rather than an increase in self-control. Similarly, utilitarian responses to moral dilemmas may result from automatic, affective processes such as reduced empathy or harm aversion rather than from enhanced deliberative reasoning (Duke & Bègue, 2015). In general, some decision phenomena may arise due to a reduction in affective, system 1 processes without an increase in deliberative, system 2 processes. In the context of our findings, these two explanations are not mutually exclusive. Further research should try to disentangle these two potential mechanisms.

There might be other ways to explain our results. For example, it is possible that the nature of language affects lying because it affects attitudes toward risk. If you face the opportunity to lie in a foreign zoo, the foreignness of the language and the situation might lead you to avoid taking risks. Perhaps in general people feel safer to lie in a native language context than in a foreign language context, because they are more comfortable taking risks in their native language. Though this is possible, it is an unlikely explanation as it is inconsistent with findings about the effect of a foreign language on risk taking. If anything, people tend to be more risk averse in their native language than in a foreign language (Costa, Foucart, Arnon, et al., 2014; Keysar et al., 2012). Nevertheless, given that the paradigm we used in this research involves no risk of being caught, it might be the case that in situations in which there *is* a risk of being caught, thinking in a native language will decrease rather than increase the tendency to lie. Further research is needed to examine this suggestion.

As expected, the intuitive tendency is to lie when placed in a social context that involves no explicit social consequences, and deliberation, which is likely enhanced by using a foreign language, lowers this tendency.

The notion that lying is the intuitive response is in contrast to some work suggesting that dishonesty is more cognitively demanding than honesty, and requires the inhibition of honest responses (e.g., Debey, Verschuere, & Crombez, 2012). These studies, however, mainly instructed participants to lie or to tell the truth. That is, lying in these studies was not spontaneous, incentivized or tempting (Verschuere & Shalvi, 2014). Here, we focus on lies that are easy to craft and that emerge in tempting and incentivized situations.

Note that we found that people lie less in a foreign language in three of our four studies. In the one study where we did not find a foreign language reduction in lying, there was no evidence of lying in the native tongue, English. Yet such honesty among those with English as their native language is inconsistent with the literature, as dishonest behavior reported in numerous studies were conducted in English (e.g., Gino & Ariely,

2012; Lu et al., 2017; Shalvi et al., 2011). With no lying in the native tongue, it is not surprising that we did not find reduced lying in the foreign language. Furthermore, the smaller effect in the Spanish study, compared to the Israeli and the Korean study, may be the result of Spanish and English being closer to each other than Hebrew to English and Korean to English.

In the three studies in which participants lied more in their native tongue, their foreign language was English. We therefore cannot rule out the possibility that our results are specific to cases where English is used as a foreign tongue. But even if our conclusions may be restricted to English as a foreign language, the findings are consequential, as English is the most common lingua franca and is often the default foreign language in international tourism, diplomacy, commerce, and ecommerce. Therefore, the discovery that using a foreign language reduces people's tendency to behave dishonestly has important implications. Ironically, people perceive speakers with a foreign accent as less credible than native speakers (Lev-Ari & Keysar, 2010), but in some situations these are the people who are less likely to lie to them, precisely because they are using a language that is foreign.

## Authors' contribution

All coauthors designed the research. Y.B.M. conducted the research in Israel, S.H. conducted it online and in Chicago, and J.D.C. conducted it in Spain. Y.B.M. and S.H. analyzed the data. All coauthors participated in writing the paper, which was led by Y.B.M.

## Note

1. The item "care," which is positive in English, was translated to Hebrew with a negative meaning and was therefore included in the negative index.

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### Supporting Information

Additional supporting information may be found online in the Supporting Information section at the end of the article:

**Appendix S1.** Methodological details.