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# Are You Hiding Something From Me? Uncertainty and Judgments About the Intentions of Others

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## Abstract

We are skilled at reading other's intentions – until they try to hide them. We are biased towards taking at face value what others say, but it is not clear why. One possibility is that we are uncertain, and make the decision by relying on heuristics. Some participants ( $n=39$ ) judged whether speakers were lying or telling the truth. Others ( $n=40$ ) did not have to commit to a judgment: they were allowed to say they were unsure. We expected these participants would no longer need to rely on simplified heuristics and so show a reduced bias compared to the forced choice condition. Surprisingly, those who could say they were unsure were *more* biased towards believing people. We consider two possible accounts, both highlighting the importance of examining raters' uncertainty, which have so far been undocumented. Allowing raters to abstain from judgment gives new insights into the judgment-forming process.

**Keywords:** social cognition; hidden intentions; heuristics; uncertainty; deception detection.

## Introduction

We all live in our own private worlds, with our own beliefs, expectations and intentions. Our thoughts and intentions influence how we act, how we perceive the world, and how we engage with others (e.g. Kelley & Stahelski, 1970). Those we engage with come with their own private worlds too, their own thoughts and intentions.

Typically we are very skilled at picking up on what others are thinking (Clark, Schreuder & Buttrick, 1983) and tracking the social context (Richardson et al., 2012), but as soon as interests conflict people may decide to close off their private worlds and hide their true thoughts. And when they do, it becomes near impossible to tell: ability to detect when someone is or is not concealing something drops to near chance and people are biased towards believing what others say (Bond & DePaulo, 2006). Why are we biased towards taking what other people say at face value, even when we have good reason to be suspicious of them?

We consider one possible explanation: that people make use of relatively simple but experientially informed heuristics such as 'people usually tell the truth'. They may rely on these rules because they are unsure whether the speaker is being honest or is hiding something, but nonetheless have to commit themselves to a judgment.

There is much room for uncertainty. People are largely successful at concealing information, giving away very little in their behaviour (Bond & DePaulo, 2006; Levine, 2010). And when people hide information from us we tend to be unsure whether the speaker is being honest or not (Anderson, DePaulo & Ansfield, 2002; DePaulo, 1992).

When we are unsure, but forced to make a decision, how do we make a judgment? One way to simplify the task and reduce the uncertainty is to rely on a heuristic or rule of thumb (Tversky & Kahneman, 1974). Whether it's because the rules of conversation imply that what is communicated is true (Grice, 1975), because people tell the truth far more often than they lie (DePaulo, Kashy, Kirkendol, Wyer & Epstein, 1996), or because social rules encourage politeness over accusing others of being deceptive (O'Sullivan, 2003), there are good reasons to make use of a simple 'people generally tell the truth' heuristic.

This paper considers whether raters rely on a truth biased heuristic precisely because they are forced to judge others despite being unsure. To test this claim, half of our participants had to make a lie-truth judgment (even if they were unsure). The remaining participants were additionally allowed to indicate they were unsure. We expected that because participants were no longer forced into making a judgment (and so did not have to rely on simplified heuristics), they would no longer show this bias towards taking what others say at face value.

## Methods

### Materials

In a prior study we developed the Bloomsbury Deception Set (Street et al., 2011, April). Twenty-two speaker participants were approached by a junior researcher posing as a documentary filmmaker's assistant. He approached people on the street near a London filming studio and asked them whether they would like to take part in a documentary. The researcher claimed he was short of time and, as a favour to him, asked participants whether they would tell us about one place they had been to and to make up a story about a place they had not been to.

Those who agreed were taken into a filming studio and left alone with a senior researcher posing as a film director.

Importantly, to the participants' knowledge the director was unaware of that they had been asked to lie. The senior researcher explained he was both a director and a researcher interested in people's true experiences in other countries, and stressed it was important that the accounts described were honest. Participants signed a waiver to this extent, stating they would be entirely honest in both deliveries.

Participants then delivered either an honest or deceptive statement in response to the question 'When you arrived in [country name], what was your first impression of the people there?'. They then answered this question a second time about a second country, this time lying if they told the truth first time, or vice versa. The junior researcher counterbalanced the order of the honest and deceptive statements (the senior researcher was blind to the order).

Two speakers admitted they had been asked to lie, and did not deliver the statement. We believe this testifies to the effectiveness of our cover story, and shows that participants truly intended to mislead the director with their spontaneously generated deceptions.

Although they were asked to provide statements of approximately 30 s, truths lasted on average 32.86 s ( $SD = 10.79$ ), and lies lasted on average 32.72 s ( $SD = 24.83$ ).

Two participants were used as a practice set. The remaining 18 speakers' lies and truths (total of 36 statements) were split into two video sets, such that a speaker appeared only once in a video set with each set containing 50% truths/lies. Additional details can be found in Street and Richardson (in press).

## Participants

Eighty University College London psychology students rated the speakers in the above stimulus set. One participant withdrew consent retrospectively. Of the remaining 79 (54 female), the mean age was 18.87 ( $SD = 1.31$ , range 18 to 22). Participants received course credit or £3 compensation.

## Procedure

Raters were instructed speakers would either lie or tell the truth about claiming to have met people in a foreign country they visited. No information was given about the proportion of lies to truths.

Raters made a response after viewing each statement. Raters in the lie-truth (LT) condition ( $n = 39$ ) made a forced binary choice. Raters in the lie-truth-unsure (LTU) condition ( $n = 40$ ) were given the additional option of indicating their uncertainty. In this condition, participants had three response options to choose from: either they believed the speaker was lying, telling the truth, or they were unsure whether the speaker was lying or telling the truth. That is, raters viewed a video passively, and after each video either made a lie-truth or lie-truth-unsure judgment.

## Design

The independent variable was the response condition (LT or LTU). The dependent variables were nonparametric signal detection measures of accuracy ( $A'$ : Rae, 1976) and bias ( $B''_D$ : Donaldson, 1992), used as measures of how likely people were to be biased toward believing others.

The calculation of these measures takes into account the veracity of the statements.  $A'$  accuracy scores range from 0 to 1, where 0.5 indicates chance accuracy and 1 perfect accuracy.  $B''_D$  bias scores range from -1 to +1, where -1 indicates a perfect lie bias, +1 a perfect truth bias and 0 indicates no bias.

## Results

Being able to explicitly indicate their uncertainty did influence how likely people were to believe others. But the effect was in the opposite direction than predicted: it increased the bias.

In the LTU condition there were three response options. Random responding would lead to a lower percentage of truth judgments (33.3%) compared to the LT condition (50%), giving rise to artificial bias differences between the two conditions. To allow for meaningful comparisons, the unsure responses in the LTU condition were not analysed. Rather, we were interested in whether raters used the truth response more often than the lie response, regardless of how they made use of the unsure option (if that option was available to them). This allowed us to ask whether the act of forcing a judgment leads to a reliance on simple heuristics, which in turn causes the truth bias. On average, 17% ( $SD = 12$ , range 0% to 38%) of LTU participants' responses were unsure responses.

The proportion of truth to lie judgments was converted into signal detection measures of accuracy ( $A'$ ) and bias ( $B''_D$ ) to examine their independent contributions to the judgment. People may say truth more often than 50% because they are particularly accurate at detecting true statements or because they are biased towards judging all statements as true. Examining the raw proportion of truth judgments does not distinguish between those two possibilities. Separating accuracy from bias by using signal detection measures avoids this problem.

Two independent samples  $t$ -tests found no evidence of a significant difference in accuracy between the LT ( $M = .62$ ,  $SD = .16$ , 95% CI [.57, .67]) and LTU conditions ( $M = .62$ ,  $SD = .20$ , [.56, .68]),  $t(77) = 0.09$ ,  $p = .929$ ,  $d = 0.02$  (Figure 1, top). There was a difference of medium effect between the LT ( $M = .16$ ,  $SD = .45$ , [.01, .30]) and LTU ( $M = .38$ ,  $SD = .50$ , [.23, .53]) conditions,  $t(77) = 2.06$ ,  $p = .043$ ,  $d = -0.65$  (Figure 1, bottom).

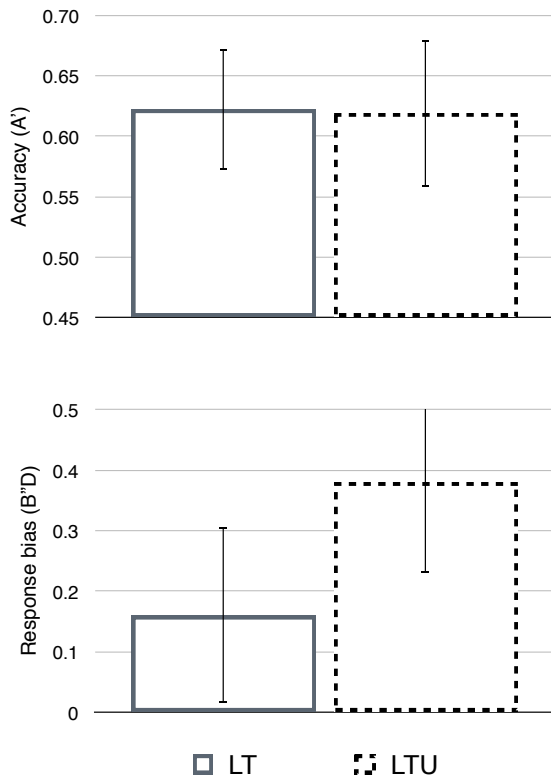


Figure 1: Accuracy in the forced choice LT and the unforced choice LTU conditions. 0.5 indicates change accuracy (top). Response bias in the LT and LTU conditions. Zero indicates no bias; positive values indicate a truth bias (bottom). Error bars denote 95% confidence intervals.

### Artefactual vs. Veridical Truth Bias

To better understand why the effect was in the reverse direction to our prediction, we reintroduced the unsure responses in the LTU condition data. The raw proportion of truth judgments were used because it does not make sense to calculate signal detection measures with three responses.

There are two possible explanations of the effect. First, there is a *veridical* bias: that is, participants in the LTU condition made more truth judgments than did participants in the LT condition. This account predicts a difference in the proportion of truth judgments made in the two response conditions. A second possibility is that there is an *artefactual* bias: that is, LTU raters made fewer lie judgments instead electing to use the unsure response. This would lead to a greater proportion of truth judgments out of all the lie-truth responses, but as a result of using the lie response less rather than using the truth response more often. This account predicts a difference in the proportion of lie judgments between the two response conditions.

Two independent samples *t*-tests compared the proportion of truth judgments and the proportion of lie judgments in the LT and LTU conditions. The proportion of truth responses showed no evidence of a statistically significant difference between the LT ( $M = .54, SD = .14, 95\% \text{ CI } [.50, .58]$ ) and the LTU conditions ( $M = .50, SD = .14, [.46, .54]$ ),  $t(77) = 1.23, p = .223, d = 0.28$ , contrary to a veridical truth bias. The proportion of lie responses did differ showing a large effect,  $t(77) = 4.25, p < .001, d = 0.96$ . There were significantly fewer lie judgments made in the LTU condition ( $M = .33, SD = .14, [.29, .37]$ ) than in the LT condition ( $M = .46, SD = .14, [.42, .50]$ ), as would be expected of an artefactual truth bias (Figure 2).

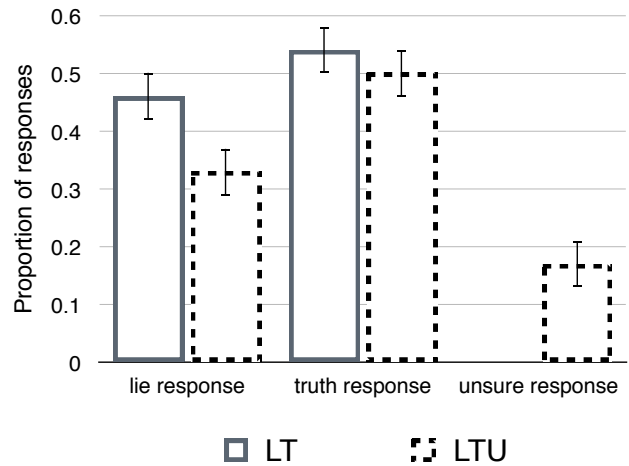


Figure 2: The proportion of lie, truth and unsure (where applicable) responses in the LT and LTU conditions. The increased truth bias in the LTU unforced choice condition results from a reduction in the use of the lie response. Error bars denote 95% confidence intervals.

A second analysis explored the use of the unsure response in the LTU condition in more detail. Prior research suggests there is greater uncertainty when judging lies than judging truths (DePaulo et al., 1997). A paired-samples *t*-test compared the proportion of unsure responses in the LTU condition when rating lies versus rating truths. As expected, there was a significantly greater proportion of unsure responses when rating lies ( $M = .39, SD = .19, 95\% \text{ CI } [.33, .45]$ ) than when rating truths ( $M = .26, SD = .18, [.20, .32]$ ),  $t(38) = 3.40, p = .002, d = 0.15$ .

In summary, after exploring the data it became clear the larger truth bias in the unforced choice condition was because the raters in this condition shifted away from making lie responses towards making unsure responses. As such, the proportion of truth to lie judgments increased because of the smaller number of lie judgments in this condition. It is also worth noting that deceptive statements were more likely to elicit unsure responses than were honest statements, replicating past research (DePaulo, Charlton, Cooper, Lindsay & Muhlenbruck, 1997).

## Discussion

We are able to understand the thoughts and intentions of others with relative ease when they want to communicate them. But when they choose to close off their private inner world to us they do so effectively, to the point where we are barely able to notice the deception. We are biased towards taking what people say at face value, even in these experiments where participants were explicitly aware that some speakers would be concealing something from them (Bond & DePaulo, 2006).

We considered one account in this paper. Raters have to deal with a socially uncertain situation, and to deal with that uncertainty they may make an informed guess using a heuristic. We considered whether relieving participants of the need to make a judgment meant they would no longer need to rely on these generally useful but somewhat error-prone rules of thumb, and so show a reduced bias toward believing others. Contrary to predictions, we found raters were more even more biased towards believing others when able to abstain from judgment. Further exploration revealed this was not a case of an increased likelihood to believe others were telling the truth, but rather that they were less likely to label any given statement a lie and instead indicate uncertainty.

There are two possible explanations of our findings. Both accounts assume raters are more unsure when they are about to make a lie compared to a truth judgment, as others have found (Fan, Wagner & Manstead, 1995). That is, we argue that exploring uncertainty is key to understanding lie-truth judgments, and that there is an asymmetry in the uncertainty between judging honest versus deceptive statements.

As a first possibility, raters may become more cautious in their lie judgments when they can explicitly indicate uncertainty. They may begin believing the speaker is lying, but decide to hedge on the side of caution and say they are unsure. This may be indicative of raters giving heed to the notion of ‘innocent until proven guilty’.

Alternatively, raters are typically more uncertain when listening to lies compared to truths (Anderson et al., 2002; DePaulo, 1992), with lies being harder to detect (Levine, Park & McCornack, 1999). Raters also have less experience with listening to lies than truths (DePaulo et al., 1996). When they are unsure, they may deduce that uncertainty is typically associated with people being deceptive and so infer that the speaker is hiding something. This would require raters can identify their own uncertainty by means of some meta-cognitive mechanism. This strategy would be adaptive inasmuch as raters typically are more unsure when they are listening to a lie, meaning in general this strategy will boost accuracy rates.

In the first case, the rater in the LTU condition begins from disbelieving the speaker but changes their response to an unsure response. In the second case, the rater in the binary choice LT condition begins feeling unsure but has to make a response. Aware that uncertainty is usually

associated with deception, raters in that condition make a lie response. The question is whether raters begin from disbelieving the speaker or from being uncertain. The current data are unable to distinguish between these two possibilities. What is clear though is that there is uncertainty in the judgment process at some level. Our research is the first to explicitly explore the effects of allowing raters to indicate their uncertainty instead of having to make a lie-truth judgment. Forcing participants into a response when they are unsure may lead them into adopting strategies that have until now gone unnoticed and undocumented.

It seems the bias towards believing what others tell us is not simply the result of making the best guess when unsure. When raters can explicitly say they are unsure, they are just as likely to say raters are telling the truth as when they are forced into judgment. The truth bias seems to be more complicated than making the best guess when they are unsure.

But note that we are discussing uncertainty *after* raters have received all the information they can receive. During the early moments of judgment formation, as the speaker begins delivering their statement and when there is little information available to the rater, we might anticipate raters will make use of context-relevant heuristics like ‘people usually tell the truth’. With no other information to rely on, we may expect the early moments of the judgment process to be biased by these heuristics. A number of decision making models assume raters begin from a point of uncertainty, but that they can begin with a preference towards one judgment as a result of experience and prior knowledge (e.g. Richter, Schroeder & Wöhrmann, 2009; Roe, Busemeyer & Townsend, 2001). It is interesting to explore whether we show an early bias towards believing others because it begins to ask what biases raters bring with them to the social situation, which will have at the least some indirect effect on the final judgment.

In summary, the tendency to believe others does not seem to be the best guess when unsure but forced to make a decision. Raters showed a similar degree of bias regardless of whether they were or were not forced into committing to a judgment. Rather, raters differed in how likely they were to rate a statement as deceptive. This may reflect an ‘innocent until proven guilty’ bias, or a meta-cognitive use of uncertainty to make adaptive and generally successful judgments. These differences in strategy have so far gone unnoticed: allowing raters to abstain from judgment gives new insights into the judgment-forming process.

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