It's my idea!

Reputation management and idea appropriation

Sacha Altay, Yoshimasa Majima, Hugo Mercier

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Abstract

Accurately assessing others' reputation, and developing a reputation as a competent, honest, fair individual—a good epistemic and moral reputation—are critical skills. In six online experiments ($N = 2811$), replicated with English and Japanese participants, we found that one way to improve our epistemic reputation is to display our competence by sharing valuable ideas, especially if we appropriate these ideas—i.e. present them as being our own, and not someone else's, whether that is the case or not (H_1). But idea appropriation also entails some risks, otherwise it would lose its quality as a reliable signal. In particular, appropriating a bad idea damages one's epistemic reputation (H_2), and being caught appropriating someone else's idea damages one's moral reputation (H_3). As a consequence, people are more likely to appropriate ideas they think are good when they are motivated to display their competence (H_4), and they refrain from doing so when the odds of getting caught increase (H_5). The way people negotiate the tradeoffs of reputation management as they communicate can help explain the spread of information, as well as misinformation.

Keywords: Reputation, competence, communication, impression management, source.

1. Introduction

For decades, Leibnitz and Newton fought a proxy battle over the invention of calculus. That these two wildly successful men would care so much over issues of precedence is revealing of the importance of sources in reputation management. First, both wanted the idea to be theirs, as having good new ideas should improve one's reputation. Second, neither wanted to be seen as having stolen the others' idea, as appropriating someone else's idea should damage one's reputation.

In this article, we explore how people, in more mundane situations, evaluate others' reputations, and manage their own reputation, as a function of which sources ideas are attributed to.

1.1. Reputation, source presentation, and idea appropriation

Human cooperation is grounded in our ability to select cooperation partners, creating a market-like competition for the best partners (Barclay, 2013, 2016). As a result, individuals have strong incentives to develop a good reputation (understood here simply as what other people think of them, but see, Sperber & Baumard, 2012), and they devote significant resources to reputation management (see e.g., Bird et al., 2005; Vonasch, Reynolds, Winegard, & Baumeister, 2018).

Developing a good reputation means acting fairly and honestly (Baumard et al., 2013), but also being competent. Indeed, warmth and competence account for 82% of the variance in perceptions of everyday social behaviors (Wojciszke et al., 1998), and honesty and competence are the two main evaluative dimensions of perceived source credibility (Hahn, Oaksford, & Harris, 2013; Harris, Hahn, Madsen, & Hsu, 2016; Pornpitakpan, 2004; Renn & Levine, 1991; Shafra, Eaves, Navarro, & Perfors, 2012). Since we focus here on competence as it relates to the quality of one's ideas (by contrast with, e.g., physical prowess), we will talk of epistemic

reputation (appearing competent) and moral reputation (appearing fair and honest) (see, Goffman, 1959; Leary, 1995).

One way in which epistemic reputation can be improved is through communication (see, e.g., Dessalles, 1998, 2007). Providing others with valued information allows us to gain status in our social network (Brock, 1968; Fromkin, 1972; Lynn, 1991). We appear more competent when we transmit plausible messages (Hahn, Harris, & Corner, 2009) or messages with fitness-relevant content, such as threats (Boyer & Parren, 2015). In modern and small hunter-gathers societies alike, good ideas are taken to signal positive qualities such as creativity, and their owners are granted prestige (Bird et al., 2005; Buccafusco & Sprigman, 2010; Henrich & Gil-White, 2001).

When we deem someone more competent because they have transmitted valuable information, this reputation boost should be modulated by how the information was acquired: coming up with an idea on our own should improve our reputation more than if we simply heard it from someone else. This is why Newton and Leibnitz fought over the discovery of calculus, and why we don't grant our high-school teacher, from whom we first hear about calculus, but who didn't develop it on their own, the same reputation.

To improve our epistemic reputation, the ideal is to generate good ideas ourselves. However, doing so is difficult, making it tempting to appropriate others' ideas. Plagiarism, the act of appropriating someone else's idea, is condemned across cultures (Mandel et al., 2019; Olson & Shaw, 2011; Yang et al., 2014). Children as young as 6 year of age think that ideas can be appropriated (Li et al., 2013; Shaw et al., 2012) and dislike copycats (Olson & Shaw, 2011; Shaw & Olson, 2015; Yang et al., 2014). Plagiarism is typically associated with relatively high stakes, whether because the content being plagiarized is culturally successful—for instance in science (Vandervoort, 1995), or in journalism (Samson, 2005)—, or because there are significant personal stakes for the content creator—e.g. university examinations or stand-

up comedy (Oliar & Sprigman, 2008). If Joey tells Rachel that Monica and Chandler are dating, and that Rachel fails to mention how she acquired this piece of information when talking to Phoebe, it seems odd to talk about plagiarism. Yet the vast majority of our ideas are of such a mundane nature, and it is largely by evaluating these ideas that we gauge each other's reputation. We use here *idea appropriation* instead of plagiarism to reflect our focus on everyday situations.

In line with the idea that one's reputation can be improved by appropriating good ideas, a series of experiments found that participants sometimes appropriate others' ideas, presenting them as their own. In these experiments, participants provided an initial answer to a variety of tasks (logical, factual, or perceptual problems) (Claidière et al., in press; Dockendorff & Mercier, In preparation; Mercier et al., In press). Participants were then provided with a different answer along with good reasons to accept it (i.e. good arguments, or solid evidence that the answer was provided by a more competent individual). Most participants changed their mind and adopted this new answer. But when asked to pass on this new answer to someone else, many participants (from 30 % to 100%) failed to mention that it had been someone else's answer, making it appear as if they had found the answer on their own.

From the point of view of the evolution of communication, signals must benefit, on average, both those who send them and those who receive them (Maynard Smith & Harper, 2003; Scott-Phillips, 2008). If senders were able to improve their reputation by presenting ideas as their own, whether this reputation boost is deserved or not, receivers would form inflated, inaccurate opinions of the senders, and thus lose out. There must be some mechanism in place to stop senders from abusing this reputation management tool, and to allow receivers to have more accurate assessments of senders' abilities (Mercier, In press; Sperber et al., 2010).

We suggest that what keeps senders mostly honest in this respect is a combination of two costs imposed on them by receivers. First, if senders receive a boost in epistemic reputation

when appropriating a good idea, senders should also suffer a loss in epistemic reputation when appropriating a bad idea. Second, if a sender is caught appropriating an idea, their moral reputation should suffer. These costs are analogous to the reputational costs incurred by overconfident speakers who are trusted less after being found to be overconfident, compared to better calibrated speakers (Tenney et al., 2007, 2008; Tenney & Spellman, 2011; Vullioud et al., 2017; see also, Mazzearella et al., 2018).

1.2. The current hypotheses and experiments

The considerations above lead to the following hypotheses:

H₁: Receivers perceive as more epistemically competent senders who present a good idea as their own, rather than as someone else's.

H₂: Receivers perceive as less epistemically competent senders who present a bad idea as their own, rather than as someone else's.

H₃: Receivers perceive as less moral senders who are caught appropriating someone else's idea.

H₄: Senders modulate idea appropriation as a function of the motivation to appear competent: the more motivated to appear competent they are, the more likely they are to present an idea (they are quite certain is good) as their own.

H₅: Senders modulate source presentation as a function of the risks of being caught appropriating someone else's idea: they are less likely to present someone else's idea as their own when the audience is more likely to find out they did so.

Some of these hypotheses have already received strong support in the literature. In particular, H_3 has been supported by a series of experiments in which children and adult reacted negatively to people who plagiarized others' ideas (Shaw & Olson, 2015; Silver & Shaw, 2018). This was true whether or not the individual being plagiarized suffered from the plagiarism, showing that plagiarism is negatively evaluated merely because of the intent to gain undue credit (as predicted by H_3). Beyond experimental evidence, these hypotheses appear commonsensical when applied to culturally or personally significant content (as in cases of plagiarism proper). However, it is not trivial that they apply to everyday, mundane content, such as solving an inconsequential logical problem or sharing a bit of gossip. As explained presently, we also test some non-trivial extensions of H_3 : (i) that receivers perceive as less moral senders who are caught appropriating someone else's idea even if they only appropriated the idea by omission and if the idea proved bad, and (ii) that receivers perceive as less moral senders who are caught appropriating someone else's idea, compared to senders who attribute someone else's idea to a third party (instead of themselves).

To test H_{1-5} , we developed novel material for six experiments. In all the experiments, participants read a vignette describing a situation, and were asked to answer one or a few questions either about what they thought of the protagonists, when they were in the position of receiver (Experiments 1 to 4), or what they would have said, when they were in the position of sender (Experiments 5 and 6). In each experiment, vignettes with four different contents were created. Table 1 offers a summary of the results.

[Insert Table 1 here]

Table 1. Summary of the findings of the six experiments. The betas reported represent the effect sizes computed by the internal meta-analyses conducted across the three data sets (i.e.

the initial study, the replication with English-speaking participants and the replication with Japanese-speaking participants).

2. General methods

We describe here the methods common to all the experiments. Participants started by completing a consent form, after which they were provided with one of the vignettes, in which the presentation order of the senders—e.g. whether the sender who appropriates the idea for herself speaks first or second—was counterbalanced. After the participants had answered all the questions related to the vignette, they had to complete a short task which required paying attention to properly understand the instructions (the attention check is available in the Electronic Supplementary Materials). Participants who skipped or failed this task were excluded. Finally, at the end of each experiment participants provided basic demographic information (gender, age, and education). All experimental materials were originally written in English. For the replication studies with Japanese-speaking participants, one of the authors translated the vignettes into Japanese, then a professional translation service provider back-translated the Japanese version into English. The minor resulting discrepancies were addressed through discussion between the authors.

In Experiments 1-4, we use chi-square goodness of fit tests to compare proportions to chance. In Experiments 1 and 3 we use Pearson's chi-square tests with Yates' continuity correction to compare the way senders are evaluated before and after feedback. In Experiments 5 and 6, we use Pearson's chi-square tests with Yates' continuity correction to compare the proportion of participants appropriating an idea as a function of different moderating variables. In the Cultural comparisons sections, we use logistic regressions to compare the replication with English-speaking participants to the replication with Japanese-speaking participants. For Experiments 5 and 6 we report the interaction between condition

and culture, whereas in the other experiment we report the main effect of culture. We only reported the effect sizes of the replications, but the full statistics are available in ESM. We consider that a result replicated when the p-value is below 0.05 and the effect goes in the same direction as the original study—with no considerations for potential differences in effect size. In the Meta-analyses sections, we conducted fixed-effects meta-analyses model implemented in the “metaphor” R package to aggregate the results of the three versions of each experiment (i.e. the original study with English-speaking participants, its direct replication, and the replication in Japan). The confidence interval reported are 95%. The replications were part of a registered report which included the hypotheses, the statistical analyses, and the sample sizes based on power calculations (see ESM for the full registered report). All statistical analyses were conducted in R (v.3.6.0, R Core Team, 2017), using R Studio (v.1.1.419, RStudio Team, 2015). Data are available at: <https://osf.io/m3pqw>.

3. EXPERIMENT 1

In the first experiment, participants read a vignette with a short dialogue featuring evaluated two senders who provided them with the same idea, senders that the participants had to evaluate. One of the senders presented the idea as if they had been able to infer it on their own, while the other sender said they’d been told about the idea. At first, participants have no reason to think the idea is bad, and they are asked to rank the senders on competence (Evaluation 1). Then, it is revealed that the idea was mistaken, and the participants are asked to rank the senders on competence again (Evaluation 2). H_1 predicts that participants will judge the sender who appropriated the idea as more competent at Evaluation 1, and H_2 that they will judge this sender as less competent at Evaluation 2.

3.1. Participants

In the initial study we recruited 200 participants from the U.S., the U.K., and Ireland online, using Prolific Academic. Participants were paid £0.2. We removed eight participants who did not correctly answer the attention check, leaving 192 participants (122 women, $M_{Age} = 33.95$, $SD = 11.41$).

In the replication with English-speaking participants, we recruited 290 participants from the U.S., the U.K., and Ireland, online using Prolific Academic. Participants were paid £0.2. We removed two participants who did not correctly answer the attention check, leaving 288 participants (169 women, $M_{Age} = 33.01$, $SD = 11.74$).

In the replication with Japanese-speaking participants, we recruited 302 Japanese participants online, using CrowdWorks. Participants were paid 30JPY (approximately £0.21). We removed 61 participants who did not correctly answer the attention check and one participant who did not answer all the questions, leaving 240 participants (158 women, $M_{Age} = 37.2$, $SD = 9.99$).

3.2. Design

Participants were presented with one of four vignettes, and asked to answer questions about the protagonists at two steps in the stories.

3.3. Materials

Here is an example of a vignette we presented to participants (the four vignettes are available in ESM):

Imagine you're talking with your friend Jack, and at some point they tell you:

“I think Scott and Nancy started dating. I was with them the other night, and there were many small signs.”

Page break

Later the same day you talk with your friend Carl, and at some point they tell you:

“I think Scott and Nancy started dating. A friend of them told me.”

Page break accompanied by a reminder of who had said what

Which friend do you think is the **best** at figuring out who dates whom?

Jack - Carl

Page break

A few days later you find out Scott and Nancy are in fact not dating.

Page break accompanied by a quick reminder of what has been said

Which friend do you think is the **worst** at figuring out who dates whom?

Jack - Carl

3.4. Results

In the initial study, before feedback, participants judged the sender appropriating the idea to be the most competent (71%, 137/192; $\chi^2(1, N = 192) = 35.02, p < .001, \phi = 0.43$).

After the negative feedback, participants deemed the sender appropriating the idea to be the least competent (60%, 115/192; $\chi^2(1, N = 192) = 7.52, p = .006, \phi = 0.20$). The feedback had a significant effect on participants' answers ($\chi^2(1, N = 384) = 36.74, p < .001, \phi = 0.31$).

We successfully replicated these three results with English-speaking participants (respectively, $\phi = 0.43, \phi = 0.29, \phi = 0.39$) and with Japanese-speaking participants (respectively, $\phi = 0.19, \phi = 0.23, \phi = 0.20$).

3.5. Cultural comparisons

Before feedback, the English-speaking participants were more likely than the Japanese participants to judge the sender appropriating the idea to be the most competent ($z = 3.25, p = .001$). After feedback, the English-speaking participants were marginally more likely than the Japanese participants to deem the sender appropriating the idea to be the least competent ($z = 1.75, p = .08$).

3.6. Internal meta-analyses

Across the three data sets, before feedback, participants judged the sender appropriating the idea to be the most competent ($\beta = 0.37 \pm 0.04, z = 9.93, p < .001, CI [0.30, 0.45]$). After the negative feedback, participants deemed the sender appropriating the idea to be the least competent ($\beta = 0.24 \pm 0.04, z = 6.52, p < .001, CI [0.17, 0.32]$). The feedback had a significant effect on participants' answers ($\beta = 0.31 \pm 0.03, z = 11.56, p < .001, CI [0.25, 0.36]$).

These results support H_1 and H_2 : when an idea is thought to be good, appropriating it allows a sender to be judged more competent, but when the idea is thought to be bad, the appropriation backfires, and the sender who had appropriated the idea is judged less competent.

4. EXPERIMENT 2

Experiment 2 uses very similar materials to Experiment 1. Again, participants were asked to evaluate two senders who provided them with the same idea, with one of the senders presenting the idea as if they had inferred it on their own while the other clearly specifying a social source for the idea. By contrast with Experiment 1, before they can evaluate the senders, participants are told that the real source of the idea for both senders is the same social source, so that one sender had appropriated the idea. H_3 predicts that participants will judge this sender as being less trustworthy than the other sender.

4.1. Participants

In the initial study, we recruited 102 participants from the U.S., the U.K., and Ireland online, using Prolific Academic. Participants were paid £0.2. We removed one participant who did not correctly answer the attention check, leaving 101 participants (67 women, $M_{Age} = 33.04$, $SD = 12.07$).

In the replication with English-speaking participants, we recruited 167 participants from the U.S., the U.K., and Ireland, online using Prolific Academic. Participants were paid £0.2. We removed one participant who did not correctly answer the attention check, leaving 166 participants (98 women, $M_{Age} = 35.37$, $SD = 12.98$).

In the replication with Japanese-speaking participants, we recruited 203 Japanese participants online, using CrowdWorks. Participants were paid 30JPY. We removed 45 participants who did not correctly answer the attention check, leaving 158 participants (100 women, $M_{Age} = 39.65$, $SD = 10.07$).

4.2. Design

Participants were presented with one of four vignettes, and asked to answer one question about the protagonists.

4.3. Materials

Here is an example of a vignette we presented to participants (the four complete vignettes are available in ESM):

Imagine the following situation:

You're talking with your friend Jack, and at some point he tells you:

"I think Scott and Nancy's couple will not last long. A friend of Nancy told me she wanted to break up with him."

Page break

Later the same day you talk with your friend Carl, and at some point they tell you:

"I think Scott and Nancy's couple will not last long. I have spent an evening with them, and many small things suggest that they won't last."

Page break

A few weeks later you find out Scott and Nancy effectively broke up, but Carl knew about it because a friend of them – the same one who'd told Jack – had also told him.

Who do you think is the most trustworthy?

Jack - Carl

4.4. Results

Participants judged senders who presented a socially acquired idea as having been inferred on their own to be less trustworthy than senders who mentioned the social source (62%, 63/101; $\chi^2(1, N = 101) = 6.19, p = .01, \phi = 0.25$). We successfully replicated this result with English-speaking participants ($\phi = 0.39$) and Japanese-speaking participants ($\phi = 0.16$).

4.5. Cultural comparisons

Japanese participants were less likely than English-speaking participants to judge as less trustworthy senders who presented a socially acquired idea as having been inferred on their own, compared to senders who mentioned the social source ($z = 2.06, p = .04$).

4.6. Internal meta-analysis

Participants judged senders who presented a socially acquired idea as having been inferred on their own to be less trustworthy than senders who mentioned the social source ($\beta = 0.27 \pm 0.05, z = 5.52, p < .001, CI [0.17, 0.37]$). These results support H₂: receivers should decrease the moral reputation of senders caught attempting to take undue credit by hiding the social sources of their ideas.

5. EXPERIMENT 3

Experiment 2 shows that a sender who explicitly appropriates someone else's good idea is judged as less trustworthy (in line with H₃). However, these are the ideal conditions for such an assessment to be made. Given the risks of attributing an unwarranted good reputation to senders on the basis of idea appropriation, receivers might benefit from reputationally punishing senders even when the benefits of idea appropriation, or the very fact that idea appropriation had taken place, are less clear.

Experiment 3 is similar to Experiment 2, with the following two significant changes: first, the idea being appropriated turns out to be bad, so that no competence reputation could have been earned by the sender; second, the idea is only appropriated implicitly, as the sender doesn't specify any source for his idea, only omitting to disclose its social source. New vignettes were created which fulfilled these criteria. We also used this opportunity to conceptually replicate Experiment 1 by asking participants to evaluate the competence of the sender both before (Evaluation 1) and after (Evaluation 2) the idea is revealed to have been bad. H₁ predicts that participants will judge the sender who appropriated the idea as more competent at Evaluation 1, and H₂ that they will judge this sender as less competent at Evaluation 2. H₃ predicts that participants will judge this sender as being less trustworthy than the other sender, after it is revealed that the idea had been appropriated.

5.1. Participants

In the initial study, we recruited 101 participants from the U.S., the U.K., and Ireland, online using Prolific Academic. Participants were paid £0.2. We removed two participants who did not correctly answer the attention check, leaving 99 participants (70 women, $M_{Age} = 35.66$, $SD = 12.35$).

In the replication with English-speaking participants, we recruited 103 participants from the U.S., the U.K., and Ireland, online using Prolific Academic. Participants were paid

£0.2. We removed one participant who did not correctly answer the attention check, leaving 102 participants (73 women, $M_{Age} = 34.20$, $SD = 11.30$).

In the replication with Japanese-speaking participants, we recruited 100 Japanese participants online, using CrowdWorks. Participants were paid 30JPY. We removed 33 participants who did not correctly answer the attention check, leaving 67 participants (34 women, $M_{Age} = 38.39$, $SD = 9.76$).

5.2. Design

Participants were presented with one of four vignettes, and asked to answer questions about the protagonists at two steps in the stories.

5.3. Materials

Here is an example of a vignette we presented to participants (the four complete vignettes are available in ESM):

Imagine the following situation:

You give your colleagues Joe and Carl a reasoning problem you couldn't solve.

Page break

The day after, you see Joe, and he says: "Here's the solution."

Page break

Later that day, you see Carl, who says: “Here's the solution, I've shown Anna the problem and she figured it out.”

Page break accompanied by a reminder of who had said what

Who do you think is the best at solving reasoning problems?

Joe – Carl

Page break

The day after, you find out that Joe had also shown your colleague Anna the problem, and it was her who'd given him the solution.

Page break

After showing the problem to an expert, you also realize that Anna's solution to the problem is wrong. As a result, the solution that both Joe and Carl gave you is wrong.

Page break accompanied by a reminder of who had said what

Who do you think is the **best** at solving reasoning problems?

Joe – Carl

Who do you think is the **least** trustworthy?

Joe – Carl

5.4. Results

In the initial study, before feedback, participants judged the sender who did not mention a source for the idea to be the most competent (71%, 70/99; $\chi^2(1, N = 99) = 16.98, p < .001, \phi = 0.42$). After being told that the idea was bad and that the sender who had not mentioned a source had appropriated the idea from someone, participants judged the sender who omitted to mention the source to be the least competent and the least trustworthy (competence: 75%, 74/99; $\chi^2(1, N = 99) = 24.25, p < .001, \phi = 0.50$; trustworthiness: 89%, 88/99; $\chi^2(1, N = 99) = 59.89, p < .001, \phi = 0.78$). The feedback had a significant effect on participants' competence evaluations ($\chi^2(1, N = 198) = 39.18, p < .001, \phi = 0.44$).

We successfully replicated these four results with English-speaking participants (respectively, $\phi = 0.43, \phi = 0.41, \phi = 0.71, \phi = 0.41$), and with Japanese-speaking participants (respectively $\phi = 0.91, \phi = 0.04, \phi = 0.70, \phi = 0.51$), with the exception that Japanese-speaking participants did not judge the sender who omitted to mention the source to be the least competent, after it was revealed that the answer was inaccurate ($\phi = 0.04$).

5.5. Cultural comparisons

Japanese participants were more likely than English-speaking participants to judge the sender who appropriated the idea to be more competent ($z = 3.37, p < .001$). After feedback, Japanese participants were less likely to judge the sender who appropriated the idea to be the least competent ($z = 2.29, p = .02$). However, after feedback, Japanese and English participants were as likely to judge the sender who had omitted to mention the source to be the least trustworthy ($z = 0.19, p = 0.85$).

5.6. Internal meta-analyses

Before feedback, participants judged the sender who did not mention a source for the idea to be the most competent ($\beta = 0.54 \pm 0.06$, $z = 8.74$, $p < .001$, CI [0.42, 0.67]). After being told that the idea was bad and that the sender who had not mentioned a source had appropriated the idea from someone, participants judged the sender who omitted to mention the source to be the least trustworthy as well as the least competent (trustworthiness: $\beta = 0.73 \pm 0.06$, $z = 11.77$, $p < .001$, CI [0.61, 0.85]; competence: $\beta = 0.35 \pm 0.06$, $z = 5.66$, $p < .001$, CI [0.23, 0.47]). The feedback had a significant effect on participants' competence evaluations ($\beta = 0.64 \pm 0.06$, $z = 10.22$, $p < .001$, CI [0.51, 0.76]). These results suggest that participants condemn the mere intention of trying to appropriate someone else credit, even when the appropriation is not an explicit lie, and when the idea appropriated is bad.

6. EXPERIMENT 4

In Experiment 2, the sender who appropriates the idea lies, while the other sender doesn't. In Experiment 3, the lie is subtler, but it could still be considered a lie by omission. Given that liars are known to be judged as less trustworthy (e.g., Fu, Heyman, Chen, Liu, & Lee, 2015), the results of these experiments could be explained by a more general negative reaction to liars. Experiment 4 tests the prediction (derived from H₃, see also Silver & Shaw, 2018) that a lie resulting in idea appropriation is judged more harshly than an equivalent lie that doesn't. The content of the vignettes used in Experiment 4 is similar to that of Experiment 2, except that they pit two senders who both lie in that they attribute to someone an idea that isn't theirs. One sender lies by appropriating A's ideas to himself. The other sender lies by attributing A's idea to B. The extent of the lie is similar: in both cases, someone's idea is misattributed to someone else. However, in only the former cases does the lie result in idea appropriation—and thus undue credit—for the speaker themselves. H₃ predicts that the speaker who appropriates the idea for themselves should be perceived as less moral.

6.1. Participants

In the initial study, we recruited 101 participants from the U.S., the U.K., and Ireland, online using Prolific Academic. Participants were paid £0.2. We removed three participants who did not correctly answer the attention check, leaving 98 participants (62 women, $M_{Age} = 35.74$, $SD = 12.37$).

In the replication with English-speaking participants, we recruited 105 participants from the U.S., the U.K., and Ireland, online using Prolific Academic. Participants were paid £0.2. We removed one participant who did not correctly answer the attention check, leaving 104 participants (71 women, $M_{Age} = 34.01$, $SD = 12.19$).

In the replication with Japanese-speaking participants, we recruited 99 Japanese participants online, using CrowdWorks. Participants were paid 30JPY. We removed 18 participants who did not correctly answer the attention check, leaving 81 participants (51 women, $M_{Age} = 36.98$, $SD = 10.03$).

6.2. Design

Participants were presented with one of four vignettes, and asked to answer two questions about the protagonists.

6.3. Materials

Here is an example of a vignette we presented to participants (the four complete vignettes are available in ESM):

Imagine the following situation:

You give your colleagues Joe and Carl a reasoning problem you couldn't solve.

Page break

The day after, you see Joe, he says:

“Skyler found the solution to the problem last night, here it is.” (Skyler is Joe’s partner.)

Page break

Later that day, you see Carl, he says: “I’ve found the solution, here it is.”

Page break

The day after, you find out that Joe and Carl had shown the problem to another colleague, Anna, who had solved the problem for them. It was neither Skyler nor Carl who’d found the solution, it was Anna.

Page break accompanied by a reminder of who had said what

Who do you think is the **best** at solving reasoning problems?

Joe – Carl

Who do you think is the **least** trustworthy?

Joe – Carl

6.4. Results

In the initial study, participants judged senders appropriating an idea for themselves less trustworthy and less competent than senders who attributed an idea to someone else (trustworthiness: 66%, 65/98, $\chi^2(1, N = 98) = 10.45, p = .001, \phi = 0.33$; competence: 60%, 59/98, $\chi^2(1, N = 98) = 4.08, p = .04, \phi = 0.20$).

We successfully replicated these two results with English-speaking participants (respectively, $\phi = 0.46, \phi = 0.25$) and with Japanese-speaking participants (respectively, $\phi = 0.09, \phi = 0.38$), with the exception that Japanese-speaking participants did not judge senders appropriating an idea for themselves to be less trustworthy than senders who attributed an idea to someone else ($\phi = 0.09$).

6.5. Cultural comparisons

Japanese participants were less likely than English-speaking participants to judge senders appropriating an idea for themselves to be less trustworthy ($z = 2.63, p = .008$), but Japanese and English-speaking participants were as likely to judge senders appropriating an idea for themselves to be less competent ($z = 0.94, p = .35$).

6.6. Internal meta-analyses

Participants judged senders appropriating an idea for themselves less competent and less trustworthy than senders who attributed an idea to someone else (competence: $\beta = 0.27 \pm 0.06, z = 4.50, p < .001, CI [0.15, 0.39]$; trustworthiness: $\beta = 0.31 \pm 0.06, z = 5.10, p < .001, CI [0.19, 0.43]$). These results further support H_3 .

7. EXPERIMENT 5

In Experiment 5 participants were asked what they would say, when in the position of a sender. We presented them with vignettes (similar in content to those of Experiment 3 and 4) in which a protagonist prompts the participant to provide an idea (e.g. the solution to a logical puzzle, or a piece of historical trivia). Participants were provided with the idea by someone else. They then had to choose whether to present the idea as their own (implicitly, as in Experiment 3), or to explicitly mention its social source.

To test H₄, we manipulated the traits of the protagonist requesting the idea. In the control condition, the protagonist was described as a nice acquaintance. In the experimental condition, he was described as always wanting to appear more competent than the participant. We expected that this latter condition would motivate participants to appear more competent, and thus to neglect to mention the social source of their idea. Studies have found that social competition (Schurr & Ritov, 2016), and motivation to gain prestige (Pascual-Ezama, Prelec, & Dunfield, 2013) increase willingness to cheat. The question raised by the current investigation is whether participants behave similarly in the context of idea appropriation. To the best of our knowledge, no previous work has been conducted on this topic.

7.1. Participants

In the initial study, we recruited 200 participants from the U.S., the U.K., and Ireland, online using Prolific Academic. Participants were paid £0.2. We removed two participants who did not correctly answer the attention check, leaving 198 participants (128 women, $M_{Age} = 34.18$, $SD = 12.47$).

In the replication with English-speaking participants, we recruited 197 participants from the U.S., the U.K., and Ireland, online using Prolific Academic. Participants were paid £0.2. We removed four participants who did not correctly answer the attention check, leaving 193 participants (125 women, $M_{Age} = 35.45$, $SD = 11.58$).

In the replication with Japanese-speaking participants, we recruited 202 Japanese participants online, using CrowdWorks. Participants were paid 30JPY. We removed 37 participants who did not correctly answer the attention check, leaving 165 participants (106 women, $M_{Age} = 36.77$, $SD = 9.33$).

7.2. Design

Participants were presented with one of four vignettes, and asked what they would answer if put in the situation described (the order of presentation of the answers was counterbalanced).

7.3. Materials

Here is an example of a vignette we presented to participants, the experimental condition is in square brackets, and the section it replaces in italics (the four complete vignettes are available in ESM):

Imagine the following situation:

Joe, *a friend who has always been very nice to you* [a colleague who always tries to show off his knowledge, and constantly underestimates your abilities], posted on social media a logical problem he invented.

Page break

Later that day you show the problem to your father who solves it.

Page break

A week later, you see Joe, [who as usual talks to you like you're stupid]. You decide to tell him about the solution to the problem.

What would you tell Joe?

- Hey Joe, my father found the solution to the problem, here it is (and you give him the solution).
- Hey Joe, this is the solution to the problem (and you give him the solution).

7.4. Results

In the initial study, when motivated to appear competent, participants selected the statement containing the social source less often (54%, 55/101) than in the control condition (82%, 80/97) ($\chi^2(1, N = 198) = 16.64, p < .001, \phi = 0.29$).

We successfully replicated this result with English-speaking participants ($\phi = 0.41$), but not with Japanese-speaking participants ($\phi = 0.11$) who were more likely, but not significantly more likely, to appropriate the idea in the experimental condition (25%, 20/80) than in the control condition (15%, 13/85).

7.5. Cultural comparisons

English-speaking participants were more likely than Japanese participants to appropriate an idea when motivated to appear competent ($z = 3.20, p < .001$).

7.6. Internal meta-analysis

When motivated to appear competent, participants were more likely to appropriate the idea ($\beta = 0.28 \pm 0.04$, $z = 6.46$, $p < .001$, CI [0.19, 0.36]). These results support H4: senders modulate idea appropriation as a function of their motivation to appear competent—when motivated to appear competent, they are more likely to present a socially acquired idea as their own.

8. EXPERIMENT 6

Experiment 6 used vignettes similar to those of Experiment 5, in which participants were asked what they would say, when in the position of a sender. As in Experiment 5, participants had to select between two possible answers: one mentioning that the idea was socially acquired, and one failing to mention this (and so implicitly appropriating the idea). In order to increase the rate of participants choosing the latter answer, both conditions of Experiment 6 were modelled after the experimental condition of Experiment 5, in which a pretentious protagonist motivates participants to show off their competence, and thus not to mention the social source of their idea. In the control condition, the implied odds of the protagonist finding out the participant owed their idea to a social source are low. By contrast, in the experimental condition, it was specified that the protagonist would likely find out the participant owed their idea to a social source. Per H₅, we predicted that participants would be more likely to mention the social source in the latter condition.

Previous experiments have shown that people are less likely to cheat when they expect to be found out (e.g. Pascual-Ezama, Prelec, & Dunfield, 2013). As in Experiment 5, The question raised here is whether participants behave similarly in the context of idea appropriation. This question is pertinent since, at least in the mundane contexts in which most idea appropriation takes place (reflected in our vignettes), it is a very mild form of cheating or lying. To the best of our knowledge, no previous work has been conducted on this topic.

8.1. Participants

In the initial study, we recruited 200 participants from the U.S., the U.K., and Ireland, online using Prolific Academic. Participants were paid £0.2. We removed two participants who did not correctly answer the attention check, leaving 198 participants (140 women, $M_{Age} = 35.11$, $SD = 11.70$).

In the replication among English-speaking participants, we recruited 200 participants from the U.S., the U.K., and Ireland, online using Prolific Academic. Participants were paid £0.2. We removed one participant who did not correctly answer the attention check, leaving 199 participants (135 women, $M_{Age} = 35.90$, $SD = 12.23$).

In the replication among Japanese-speaking participants, we recruited 202 Japanese participants online, using CrowdWorks. Participants were paid 30JPY. We removed 40 participants who did not correctly answer the attention check, leaving 162 participants (110 women, $M_{Age} = 37.48$, $SD = 8.30$).

8.2. Design

Participants were presented with one of four vignettes, and asked what they would answer.

8.3. Materials

Here is an example of a vignette we presented to participants, the experimental condition is in square brackets (the four complete vignettes are available in ESM):

Imagine the following situation:

Joe, a colleague who always tries to show off his knowledge, and constantly underestimates your abilities, posted on social media a logical problem he invented.

Page break

Later that day you show the problem to your father who solves it [and writes down the solution].

Page break

A week later, you see Joe, who as usual, talks to you like you're stupid even though you are pretty good at logic. You decide to tell him about the solution to the problem. [Joe knows your father well, and since your father wrote the answer, it's likely that Joe will recognize his handwriting.]

What would you tell Joe?

- Hey Joe, my father found the solution to the problem, here it is (and you give him the solution).
- Hey Joe, this is the solution to the problem (and you give him the solution).

8.4. Results

In the initial study, participants selected the statement mentioning the social source more often when the protagonist was very likely to know about the idea's source (80/100), compared to when the odds of being found out were lower (54/98) ($\chi^2(1, N = 198) = 12.91, p < .001, \phi = 0.26$). We successfully replicated this result with Japanese-speaking participants

($\phi = 0.18$) but not with English-speaking participants ($\phi = 0.09, p = .23$), who only showed a small but non-statistically significant tendency to appropriate the idea less often when the protagonist was very likely to know about the idea's source (63%, 63/100), compared to when the odds of being found out were lower (54%, 53/99).

8.5. Cultural comparisons

Japanese participants were as likely as English-speaking participants to omit mentioning a social source when the odds of being found out were low compared to high ($z = 0.94, p = .35$).

8.6. Internal meta-analysis

When the protagonist was very likely to know about the idea's source, compared to when the odds of being found out were lower, participants selected the statement mentioning the social source more often ($\beta = 0.17 \pm 0.04, z = 4.09, p < .001, CI [0.09, 0.26]$). This result support H₅: senders modulate source presentation as a function of the risks of being caught appropriating someone else's idea.

9. Conclusion

Why do people appropriate ideas, passing them as their own when in fact they came from someone else? Why do they do this not only for genuine breakthroughs, but even in mundane situations? And, assuming such idea appropriation brings some advantages, why don't they do it more? In Experiment 1, we show that someone who presents an idea as having been acquired by themselves, by contrast with owing the idea to someone else, is deemed more competent—even in mundane situations, when the idea is of no great import. Experiment 1

also shows that idea appropriation can backfire if the idea turns out to have been bad, in which case the sender who had appropriated it is deemed less competent.

If senders only paid reputational costs for appropriating ideas when they turn out to be bad, they should still appropriate all the ideas they deem likely to be correct, irrespective of their sources. There must thus be a different mechanism to keep people from appropriating others' ideas: for example, people caught appropriating others' ideas should be deemed less trustworthy, as we show in Experiment 2. People can be punished for appropriating an idea even if they only do so implicitly (by failing to mention the social source of the idea) (Experiment 3), and they are deemed less trustworthy if they appropriate an idea for themselves than if they engage in an equivalent lie by attributing someone's idea to a third party (Experiment 4).

When in the position of senders, participants made a strategic use of sources to manage their reputation. They were more likely to appropriate an idea when they were motivated to appear competent (Experiment 5), but less likely to do so when the odds of being found out were higher (Experiment 6).

We replicated these findings with English-speaking participants and Japanese-speaking participants, observing only minor differences. All the effects from the replications were in the same direction as those of the initial experiments, they failed to reach significance only in four cases out of 22 (and in each of these four cases the effect was replicated in at least one of the two samples), and all the meta-analyses supported our predictions.

The differences observed between the English-speaking and the Japanese sample appear inconsistent. For example, in Experiment 1 the English-speaking participants, compared to the Japanese participants, judged the sender who had appropriated the idea to be more competent, whereas this difference was reversed in Experiment 3. Although it would be possible to speculate on the cause of these differences (e.g. the idea appropriation is explicit in

Experiment 1 and implicit in Experiment 2), given the absence of strong hypotheses, and of robust results, we chose to focus here on the overall pattern that emerges across both cultures.

On the evaluation side, one of the clear patterns that emerges from our results is that people who are caught appropriating others' ideas damage their moral reputation. Could this could be a side effect of a general and well-documented tendency to dislike liars (e.g. Fu, Heyman, Chen, Liu, & Lee, 2015)? Experiment 3 reveals that even people who merely appropriate an idea by omitting to mention its social source damage their moral reputation, and Experiment 4 that people who falsely attribute an idea to someone else's damage their moral reputation less than those who appropriate it for themselves. This latter result suggests that participants condemn not only the lie, but also the attempt to gain undue credit (as suggested by Silver and Shaw 2017).

On the production side, our results fit well with the literature suggesting that people tend to distort how they present information, often by attributing to themselves others' ideas, as in cases of unconscious plagiarism (Brown & Murphy, 1989; Wicklund, Reuter & Schiffmann, 1988), also called egocentric memory bias (Hyman et al. 2014, Ross & Sicol, 1979; Landau & Marsh, 1997; Stark & Perfect, 2007). In these studies, participants have been shown to be more likely to claim their partners' contributions as our own than attributing their contributions to their partners (more generally, on the social functions of memory, see Mahr and Csibra, 2018, 2019). The present framework helps set moderating variables, or boundary conditions on these phenomena, such that egocentric memory bias should be more prevalent when one's incentives to appear competent are higher, and less when the chances of being caught appropriating someone's idea are higher. An example of this moderation in idea appropriation can be observed in rumor transmission (Altay et al., 2020). Unreliable rumors are often attributed to a friend of a friend, even though they should in fact the attribution should mention an increasingly large number of friends (someone who receives a rumor

attributed to a friend of a friend should transmit it as coming from a friend of a friend of a friend, etc.). Attributing the rumor to a friend of a friend (rather than a longer chain of friends) makes the rumors more plausible, which in turn should help the sender gain credit from sharing it. Attributing the rumor to a friend of a friend (rather than to our personal experience) limits the reputational damages if the rumor is proven false.

In the case of rumors, subtle use of idea appropriation might help the rumors spread by making them appear more plausible. In other cases, idea appropriation might hinder the spread of ideas by making it less likely that senders convince receivers (Castelain et al., 2019; Claidière et al., in press; Dockendorff & Mercier, In preparation; Mercier et al., In press). For example, on Internet forums, pro-vaccine individuals often argue from personal experience (e.g. “my son was vaccinated and he was fine”) when in fact they would have acquired their pro-vaccination beliefs from authoritative sources such as their doctor (since, by definition, their personal experience could not have prompted the original decision; Faasse, Chatman, & Martin, 2016; Fadda, Allam, & Schulz, 2015). To the extent that their personal experience is less convincing than appeal to a well-established authority, the idea appropriation might hinder the spread of accurate beliefs about vaccination. More generally, the way people negotiate the tradeoffs of reputation management as they communicate should help explain the spread of information, as well as misinformation (for an example with fake news, see: (Altay et al., 2019); with rumors, see: (Altay et al., 2020)).

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11. Data availability

The data associated with this research are available at <https://osf.io/m3pqw>.

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