What happens in vagueness*

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Abstract

Why do people speak vaguely when they propose illicit deals? We test the theory that speakers use vagueness strategically. Participants play an economic game in which a schemer and accomplice can coordinate to take money from a mark. When a cop was watching, the schemer was more likely to send a vague message ("Some things are better left unsaid") to the accomplice, which usually recruited the accomplice to collude. In Experiment 2, the schemer could write their own message. When the cop was watching, they wrote messages that were more vague, which again recruited the accomplice effectively.

Keywords: vague talk, indirect speech, cheap talk, coordination, punishment

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1 Introduction

Adam Smith thought that collusion is so tempting that any talk among competitors is likely to instigate a scheme: "People of the same trade seldom meet together, even for merriment and diversion, but the conversation ends in a conspiracy against the public, or in some contrivance to raise prices" (Smith, 1776). How does this talk work? Must the conspirators use costly signals, or can they hatch a scheme with cheap talk? Should they spell out the plan in direct language, or since enforcers may be watching, could they get by with vague hints? Here we investigate in economic experiments whether people use vague talk to coordinate, and whether they do so strategically when an enforcer is watching.

Examples from legal cases suggest that colluders can reach deals with talk that is cheap and vague. Take the case of an antitrust lawsuit in which one manager alluded to a rival the mutual benefits of raising prices: "Even though we are competitors, we have the common goal of making our category a well-positioned, respected playing field. $5 and $8 stocks are a result of no respect" (Nguyen, 2008). In a case of insider trading, the offenders referred to the illicit trades as "baby" in vague texts such as "exit baby" and "enter few baby" (US SEC v. Nellore et al, 2019). In a case of price fixing, an executive confirmed the plan with the text message, "sounds like we know what we need to do" (Actavis Holdco v. State of Connecticut, et al., 2019). The same obscurity is found in other illicit proposals. A school administrator said to a parent, "For the uh, enrollment fee and stuff like that, maybe you and I can do something, you think?", and by "something" he meant to exchange sexual favors for the fees (Dolcefino, 2008). A politician advised a witness in a criminal case: "it could be very financially beneficial, um, for you to consider telling the truth" (Nevada Appeal, 2010). And after abortion was banned in Texas, some doctors had to drop hints to women with high-risk pregnancies such as, "The weather's really nice in New Mexico right now" (Simons-Duffin, 2023).

This paper provides the first evidence in a lab setting that people deploy indirect speech strategically in response to economic incentives. We test the theory of the strategic speaker, in which talking includes elements of both cooperation and conflict, as in a mixed-motive game or when the speaker is uncertain about the receiver's payoffs (Lee and Pinker, 2010; Pinker, 2007; Pinker et al., 2008). The speaker in this game is uncertain about whether the receiver wants to cooperate. For instance, an offender may be unsure whether a witness wants a bribe or would instead report it to the police. The offender would like to propose a bribe to a corrupt witness but not to an honest witness who would report them. Thus the speaker's interaction with the witness could be cooperative or adversarial.

In this predicament, the speaker may gain some advantages by speaking vaguely. A corrupt witness can decipher an obscure message and accept the bribe, though there is some chance of misunderstanding. An honest witness may not be sure the speaker offered a bribe, and if they report it the speaker can leverage the vagueness to deny the offense.

Previous studies in psychology support this explanation of vague talk. For instance, participants judged that an officer would be less certain that a bribe was attempted when the proposal was more vague, and that a jury would be less likely to convict the speaker for a vague proposal, supporting the idea that vagueness reduces the chance of getting caught (Lee and Pinker, 2010). And participants judged that sexual innuendo such as "Would you like to see my etchings?" is less likely to harm a friendship compared to an overt proposition. These studies show how listeners judge vague talk, supporting the hypothesis that indirect speech makes illicit proposals more deniable. The next step is to examine the speaker who produces vague talk. If speakers are strategic, then they should produce vague talk in the right situations, when they need to coordinate with a potential accomplice while reducing the danger of punishment.

We designed economic experiments to study whether speakers use vague talk strategically when an adversary might punish them. In doing so, we extend the theory to a situation where the speaker interacts with both a potential conspirator and a hostile enforcer, two separate players rather than one player who could be cooperative or hostile. In the first experiment, participants take the role of the schemer, accomplice, mark, or cop. The schemer and accomplice decide whether to try to conspire to take money from the mark. The schemer can send a message to the accomplice by selecting a direct message to take the money, a vague message, or a direct message to pass and refrain from taking the money. Across conditions, we manipulate whether a fourth participant, the cop, sees the schemer's message and then decides how much to punish the schemer by deducting from their payoffs. With this design, we test whether schemers are more likely to use vague talk when a cop is watching. In the second experiment, we extend the investigation to look at the spontaneous production of vague talk. Participants play the same game except now the schemers can write their own messages which we then rated for vagueness. In both experiments, we find that speakers use vague talk strategically to evade punishment.

We complement these with two modeling approaches. First, we show how vague speech was indeed optimal in our experiment by estimating how coordination and punishment vary as a function of directness. Second, we provide a simple signaling model. It shows that, as long as there is some noise in communication and the cost of false positives is relatively higher for the cop compared to the accomplice, an equilibrium exists where opportunistic schemers can use vague talk to coordinate and evade punishment.

1.1 Previous literature

Our experiments provide new evidence on vague signals, and on the tactics and content of collusive communication. In particular, we contribute to a game theoretical literature on language and economics (Rubinstein, 2000; Lipman, 2012) and communication more broadly (Crawford, 2016). As noted by Crawford (2016), a large literature on collusion focuses on tacit collusion, which happens without communication. However, colluders do communicate, and the content of this communication has been surprisingly underexplored.

One reason for this gap is that economists have doubted the effectiveness of cheap talk in general (whether clear or vague). Cheap talk seems unreliable since a rational speaker would lie whenever it benefits them. Indeed, when people's interests are completely opposed like in chess or poker, they have little use for speech. On the other hand, however, people can trust cheap talk when they share the same interests and have no incentive to lie (Farrell and Rabin, 1996). In the middle ground where people's interests partly overlap, the uses of cheap talk have been more controversial.[1]

In contrast, cheap talk is not too surprising to linguists and psychologists who study language, because they usually view talking as a form of cooperation. Grice (1975) (discussed in Rubinstein (2000)) proposes that conversation operates by the cooperative principle in which people typically assume that speakers' utterances are informative, true, relevant, and clear. Thus, the cooperative principle implies that conspirators can assume that their partner will speak truthfully, even if the talk is cheap. While this cooperative theory may apply in many instances, it does not help understand people's speech in mixed-motive games since they are not purely cooperative.

Aumann (1990) pressed the skeptical view with the conjecture that talk is meaningless in mixed-motive games when the signaler wants the receiver to take the same action no matter what the signaler does: if a player always wants their partner to choose stag in the stag hunt game, then their message to choose stag is uninformative babble. Indeed, all signaling games with equilibria have an equilibrium in which the players ignore any talk as babble (Farrell and Rabin, 1996).

[1] Awaya and Krishna (2016) show that a cartel can persist based on exchanges of unverified sales information, arising from the fact that a correlation in prices should lead to a correlation in sales.

However, other theoretical work in economics argues that Aumann's conjecture goes too far (Crawford and Sobel, 1982; Farrell and Rabin, 1996; Crawford, 2016). These models find that rational players can trust cheap talk even with some limited incentive to lie. Supporting these accounts, experiments find that people do use cheap talk to coordinate (e.g. Cooper et al., 1989, 1992; Dugar and Shahriar, 2018). For example, in one experiment with a stag hunt game (in which stag is the most profitable of two equilibria), participants chose stag 2% of the time without communication, 69% with one-way communication, and 95% with two-way communication (Cooper et al., 1992). Especially relevant, Charness (2000) tested Aumann's conjecture in an experiment by modifying the stag hunt game so that each player always wants their partner to choose stag. Again, participants used cheap talk to coordinate on the more profitable equilibrium: they chose stag 91% of the time with one-way communication compared to 35% without communication. More generally, experiments show that people can use cheap talk to earn greater payoffs in a variety of coordination games (Charness and Dufwenberg, 2006; Camerer, 2011).

If cheap talk is of debatable use, vague talk is even more perplexing. Why bother to speak at all if only to avoid saying what you mean? In the psycholinguistics literature, vague talk is more challenging to understand since it violates the cooperative maxim of clarity, possibly wasting the partner's time in deciphering the message and risking misunderstanding. Psychologists have argued that vague talk can serve the cooperative goal of politeness (Brown and Levinson, 1987). For instance, when a boss's directive to workers might come across as too domineering, they can add a touch of indirectness to preserve their cooperative relationship, for instance saying "it would be great to finish the job on time" rather than "finish the job on time." Politeness can explain these cases, but it cannot explain collusion by vague talk. In fact, experiments in psychology show that while indirect requests can be polite, speech that is just plain vague is often perceived as impolite, since it imposes on the listener to guess what the speaker means (Lee and Pinker, 2010). More to the point, when price fixers, insider traders, and indecent proposers speak vaguely, they are not trying to be polite.

Some economic models and experiments have captured situations where vague communication is optimal.[2] Building on Crawford and Sobel (1982), Blume et al. (2007) present a model in which a sender communicates their type by choosing a value that can be one of two possible types (0 or 1) or somewhere vaguely in the middle, which the receiver interprets by drawing from a noisy distribution

[2] Morris (2001) models an advisor who wants to signal the truth but also does not want to harm their reputation with a politically incorrect statement. However, the advisor can only send one of two clear messages and cannot choose a vague message in this model.

around the message's value. The receiver then chooses a number and earns the most when it matches the sender's type, while the sender earns the most by misleading the sender to choose a number that differs from their type by a particular amount. They find that when the sender gains by misleading the receiver, the sender's optimal message can be a vague value in the middle. In the experimental literature, Agranov and Schotter (2012) study a game in which an announcer wants to maximize the joint payoffs of two players in a coordination game. The two players do not know the exact payoffs and instead see four possible matrices of payoffs numbered 1 to 4, some with asymmetric equilibria like the battle of the sexes. The announcer sees which game is in effect and can then announce it precisely or with a vague set (e.g., the game is number 1 or 2). They find that the players sometimes coordinate better when they receive a vague message that conceals their asymmetric payoffs, which would otherwise interrupt their ability to coordinate using focal points. Additionally, participants in the announcer role sometimes chose to send a vague set rather than the exact game.

However, while these previous experiments pertain to vague communication in general, they do not capture the kind of vague talk used in collusion and illicit proposals. In the previous work, the senders used vagueness to mislead or conceal facts from the receivers. In contrast, colluders use vague messages not only to conceal something but also to signal an accomplice, who shares the same interests. The colluder's vague message is meant to hint as much as to hide.

2 Experiment 1

We first ask whether participants are more likely to send vague messages when a cop is watching.

2.1 Methods

We recruited 755 participants from the United States on MTurk (Berinsky et al., 2012). Participants earned 50 cents for completing the task plus a bonus that depended on their payoffs in the game. Participants read the instructions, made choices in the game, and answered comprehension questions. We excluded from analysis participants who missed any of the four comprehension questions (30%), yielding a final sample of 525 participants (34% female; age: M = 32, SD = 9 years). In a between-subjects design, we randomly assigned participants to one role in the no cop condition (n = 78 schemers, 72 accomplices, and 71 marks) or the cop condition (n = 81 schemers, 78 accomplices, 75 marks, and 70 cops).

In the no cop condition, participants played one role in a three player game with a schemer, an accomplice, and a mark. The schemer and accomplice begin with 40 cents each, and the mark begins

Table 1: Payoffs for Schemer and Accomplice

		Accomplice	
		Take	*Pass*
Schemer	*Take*	80, 80	30, 40
	Pass	40, 30	40, 40

with 150 cents. The schemer and accomplice each decide to try to take the mark's money or pass. They can work together to take 50 cents each from the mark, but it costs 10 cents to try to take and both players have to take to succeed. If both players choose to take, then they earn 80 cents each (40 – 10 + 50) and the mark earns 50 cents. Table 1 shows the payoffs for the schemer and accomplice.

Before deciding, the schemer chooses to send one of these messages to the accomplice:

1. "Let's choose Pass and leave Person A with their money."
2. "Let's choose Take and take Person A's money."
3. "Some things are better left unsaid."

The first option is a message to pass, the second is the direct message to task, and the third is a vague message which might suggest to take. The schemer chooses what message to send and whether to take or pass. The accomplice chooses their action depending on the schemer's message: They select whether to take or pass for each of the three possible messages. In the cop condition, the game is the same except a fourth player, the cop, observes the schemer's message and decides how much to punish the schemer by deducting 0-35 cents (at no cost to the cop). Particularly, the cop chooses how much to deduct from the schemer for each of the three possible messages. We set the maximum punishment below the gains from taking so that the schemer can always profit from jointly taking with the accomplice. Note that the cop observes only the schemer's message, not their choice of take or pass. Also note that the cop cannot punish the accomplice, so the accomplice's payoffs depend only on their coordination with the schemer whether the cop is watching or not.

The theory of the strategic speaker (Pinker et al., 2008) makes several predictions. First, when no one is watching, the schemer will generally favor the direct message to take over the vague message, since the direct message is clearer. The schemer and accomplice share the same incentives in this case, so one equilibrium is that the schemer honestly sends the take message and the accomplice responds by taking. Second, when the cop is watching, the schemer will send the vague message more often than without a cop. The schemer will choose vague talk strategically when it could reduce the punishment for taking. Third, the cop will punish the vague message less than the direct message to take. Fourth, the accomplice will be more likely to take after receiving the vague message than the pass message, though not as likely as when they receive a direct message to take.

2.2 Results and discussion

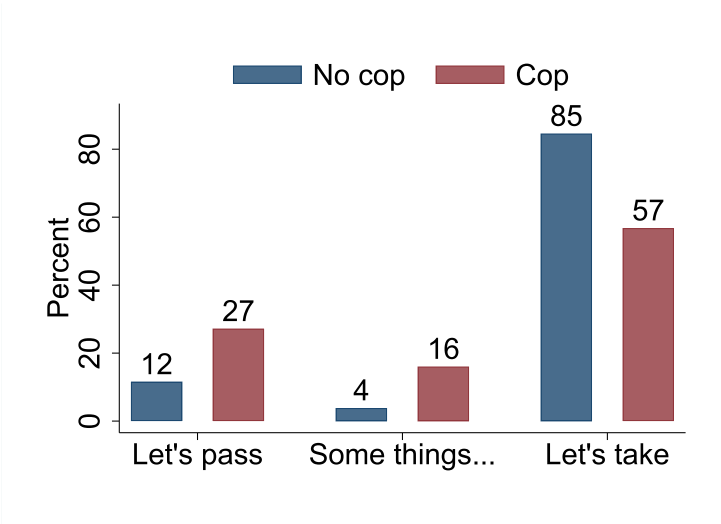
Figure 1(A) shows the messages that the schemer sent to the accomplice. Generally, most schemers sent the direct message to take, consistent with their self-interest and need to coordinate with the accomplice. When no cop was watching, the schemer favored the direct message to take (85% of messages) over the vague message (4%). When the cop was watching, the schemers' messages changed (χ^2 = 15.23, p < .001): They sent less direct messages to take, more vague messages, and more messages to pass. If we concentrate on the subset who said to take, directly or indirectly, adding the cop increased the percentage of vague messages from 2% to 21% (χ^2=10.0, p =0.002). Similarly, if we focus only on the schemers who actually chose to take in the game, adding the cop increased the percentage of vague messages from 4% to 22% (χ^2=9.1, p <.001). As for their actions, fewer schemers chose to take when the cop was watching (72%) compared to without the cop (87%; χ^2=5.89, p =0.015).

Turning to the accomplice, Figure 1(B) shows the accomplice's actions for each possible message from the schemer. Recall that the accomplice could not be punished by the cop (only the schemer could be punished) so their choice in both conditions amounts to guessing whether the schemer will take given their message. In both conditions the accomplice chose to take more often after a vague message compared to a message to pass. Without the cop, 68% chose take after the vague message compared to 1% after the message to pass, χ^2=70.59, p <.001. With the cop, 60% chose take after the vague message compared to 8% after the message to pass, χ^2=46.15, p <.001. Also, in both conditions the accomplice was the most likely to take after the direct message to take: 96% without the cop and 87% with the cop, exceeding the vague message (χ^2=18.77, p <.001 and 15.77, p <.001).

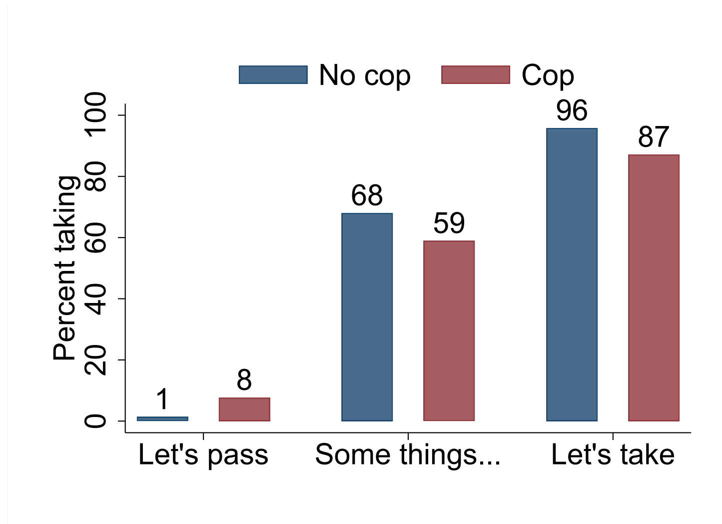
Finally, Figure 1(C) shows that in the cop condition the cop punished schemers less harshly for vague messages (M = 12.2 cents) than direct messages to take (M = 19.6), (paired t=4.45, p < .001). They punished messages to pass the least (M = 1.9 cents) (paired t=6.45, p < .001).

These findings support the hypothesis that people use vague talk strategically to avoid blame and punishment by observers. Further, the receivers of vague talk were able to interpret and use it

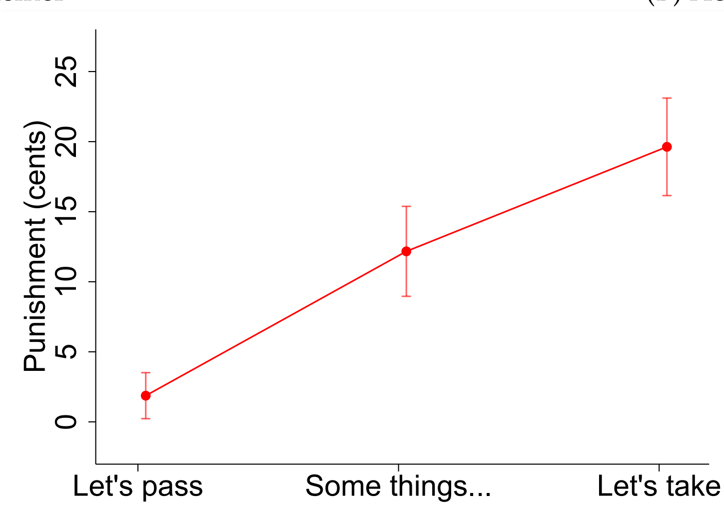
Figure 1: Decisions made by the schemer, accomplice, and cop



(A) Schemer



(B) Accomplice



(C) Cop

Notes: Panel (A) shows the percentage of schemers who chose each message, split by whether or not a cop would see the message. Panel (B) shows the actions of the accomplice depending on the message sent by the schemer, also split by no cop or cop. Panel (C) shows the average deduction chosen by the cop based on the message of the schemer. The error bars show 95% confidence intervals.

strategically despite the ambiguity of the message. The accomplices chose to take more than half the time after receiving the vague message, which was far more than for the message to pass though not much as the direct message to take. And confirming the speaker's strategy, the cop punished the vague message less than the direct message to take.

3 Experiment 2

We found that people strategically chose a vague message from a preset list. But we have not yet examined whether people spontaneously produce vague speech to evade punishment. In this experiment, the schemer can write their own message to the accomplice. The accomplice and cop observe the schemer's message as before. A separate group of participants rate the directness of each message, allowing us to measure the schemer's production of vague speech.

3.1 Methods

We recruited 805 participants from Mturk to play an economic game. Participants earned 50 cents for completing the task plus a bonus that depended on their payoffs in the game. We excluded from analysis participants who missed any of the four comprehension questions (25%), yielding a final sample of 604 participants (32% female; age: M = 33, SD = 10 years). In a between-subject design, we randomly assigned participants to the no cop condition (n = 79 schemers, 114 accomplices, and 86 marks) or the cop condition (n = 75 schemers, 84 accomplices, 89 marks, and 77 cops).

Participants played the same game as in Experiment 1 except the schemer wrote their own message in a textbox. The schemer's message was stored online and then transmitted to the participants they were matched with: the accomplice and the cop in the cop condition. To measure the directness of the schemers' messages to take, a separate group of participants rated each message. We recruited 112 participants on Mturk and excluded those who missed any of the four comprehension questions, leaving a final sample of 59 raters (39% female; age: M=33, SD= 9 years). The raters read instructions that described the game leading to the messages. Then they read an explanation of directness with examples, including the following passage:

> For example, a message like "Let's take their money," is very direct and clear. On the other hand, a message like "it would be great to make a little extra here" is a little more indirect and less clear whether they are proposing to Take. A message like "Let's pass" clearly says not to Take. In general, a message is more indirect when the Sender could deny that they

meant to take the money. A direct message like "Let's take the money" is difficult to deny. But for a message like "it would be great to make more money," the Sender might say that they didn't mean to take and it was a misunderstanding.

The raters chose a value on a 7-point scale from 1 "Did not say to take" to 4 "Indirectly said to take" to 7 "Directly said to take." The scale ranges from messages to pass, to vague messages that indirectly suggest to take, to direct messages to take. Thus intermediate ratings denote vague talk in the ambiguous middle between direct messages to pass and take. They each rated 15 messages providing an average of 8.4 ratings per message. We averaged the ratings for each message to construct a measure of vague talk.

Generally, the ratings correspond to the intuitive notion of directness. For instance, the messages with the lowest ratings close to 1 include "Don't take!" (rated 1.0 out of 7) and empty statements such as "Hello" (rated 1.0) and "Good day friend! Hope you're having a good day" (rated 1.1). At the other extreme, we have direct messages to take with ratings over 6 such as "I am going to take. You should too," "I am taking," and "Let's take." In the middle, the messages with intermediate ratings were vague messages hinting to take, such as:

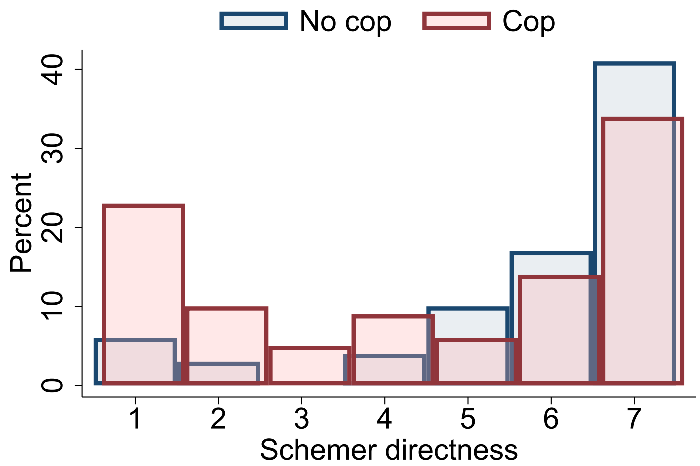
- "Statistically there is only one answer to choose to give us the closest thing to an equal distribution of money." (average directness: 3.84)
- "I think we know what would benefit both of us the most." (4.07)
- "There is only one way we can help ourselves." (4.12)
- "please work with me to achieve a good outcome for both of us" (4.16)

The complete set of messages and ratings is in the Appendix Table A1.

3.2 Results

Figure 2 shows the schemer's messages according to how directly they said to take. As before, most schemers in the no cop condition sent a direct message. The modal rating of directness was 7 out of 7. However, the schemers' messages became less direct when the cop was watching, decreasing in directness from an average of 5.7 without the cop to 4.4 with the cop, $t=4.23$, $p < .001$. Moreover, if we consider only the schemers who chose to take, their messages decreased in directness from an average of 5.9 to 5.3, $t=2.23$, $p = .028$. Thus, the decrease in directness was not only due to more schemers choosing to pass

Figure 2: Schemer directness



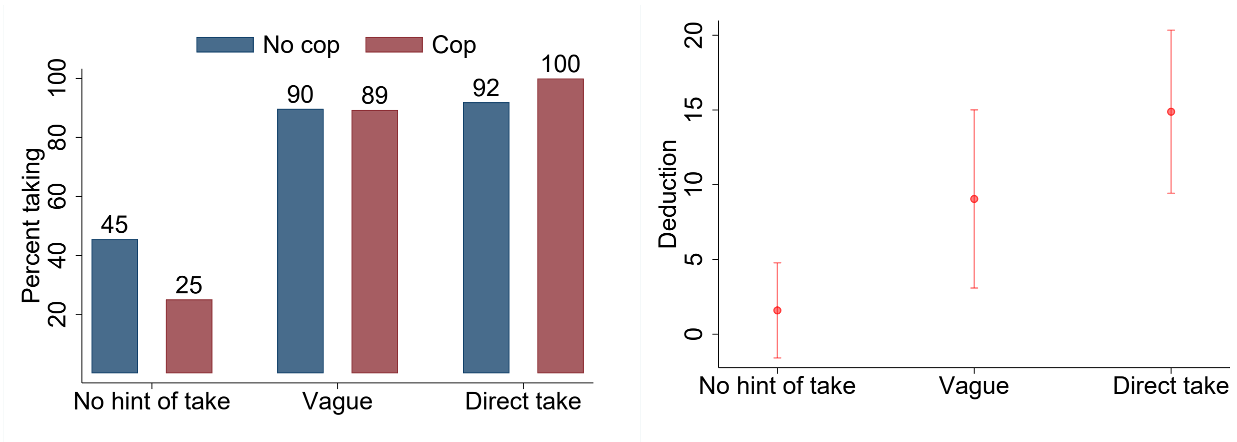
Notes: This is a histogram of the average ratings of directness for the schemer's messages, split by whether or not a cop would see the message.

Turning to the players' actions, most schemers chose to take without the cop (96%) but fewer schemers chose to take when the cop was watching (77%; χ^2 = 13.34, p <.001). More accomplices chose to take without the cop (86%) compared to when the cop was watching (71%; χ^2 7.26, p <.01).

Critically, however, the accomplices' choices depended on the directness of the schemer's message. Figure 3(A) shows the percentage of accomplices who chose to take as the schemer signaled to take more directly. We categorize the messages by their directness rating: messages to pass and empty messages like "Hello" were rated less than 2, vague messages implying to take were rated 2 to 6, and direct messages to take were rated 6 or higher. Across both conditions combined, the accomplice became much more likely to take as the message changed from no hint of taking (31%) to a vague message to take (89%, χ^2 = 35.38, p <.001). And since the vague messages already persuaded most accomplices to take, they were no more likely to take in response to a direct message to take (95%, χ^2=1.13, p =0.288). Thus, just a hint of the schemer's plan to take was enough to signal the accomplice. Moreover, the effectiveness of vague talk was not driven only by ambiguous messages from schemers who decided to pass. When we restrict the analysis to only schemers who chose to take, we again see that as the message changes from no hint of taking to the vague message, the percentage of accomplices who take increases from 50% to 89% (χ^2=12.26, p <0.001).

Finally, Figure 3(B) shows the cop's punishment of the schemer as their message to take became more direct. The cop punished the schemer more harshly as their intention to take became clearer. On

Figure 3: Accomplice and cop decisions



(A) Accomplice

(B) Cop

Notes: Panel (A) shows the actions of the accomplice, split by condition and by the directness of the schemer's message. Panel (B) shows the punishment chosen by the cop based on the directness of the schemer's message.

average the cop deducted 2 cents for a message with no hint of taking, 9 cents for a vague message implying to take, and 15 cents for a direct message to take. The punishment did not differ significantly between vague and direct messages to take (indirect vs. take: t=1.39, $p = 0.170$), while the punishment was significantly greater for the vague and direct messages to take compared to the message with no hint of taking (vague vs. no hint: t=2.24, $p = 0.03$; direct take vs. no hint: t=3.66, $p < 0.001$).

4 Discussion

Overall, these experiments support the theory that people use vague talk strategically to avoid punishment from hostile observers. In Experiment 1, when no cop was watching, most schemers chose the direct message to take, which was most effective at recruiting the accomplice to take. But when the cop was watching, more schemers chose to send a vague message, consistent with a motive to avoid punishment. Accordingly, the cop punished the schemer less for the vague message than the direct message to take. In Experiment 2, we found similar results when the schemer wrote their own message rather than choosing from a list. When the cop was watching, the schemers wrote messages that were more vague. Thus, these experiments further support the theory of the strategic speaker by extending previous work to demonstrate the speaker's production of vague talk in an economic experiment with real money at stake.

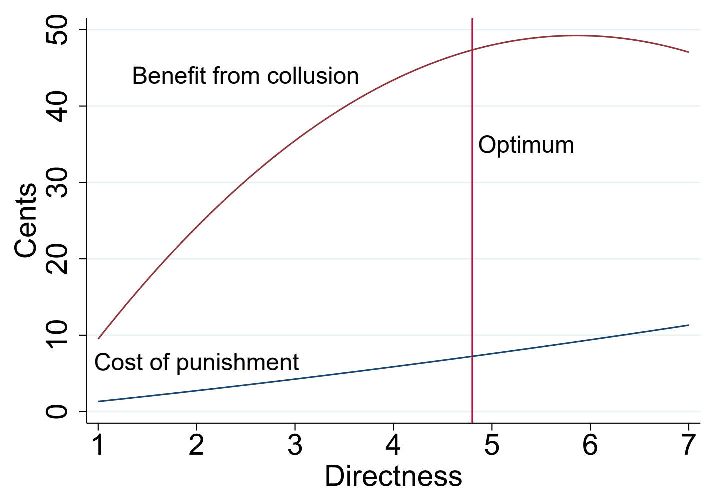
Given these findings, when in general does a speaker profit by talking vaguely? Pinker et al. (2008)

show that vague talk can be profitable if the friendly and hostile listeners employ different thresholds for acting. This seems likely because in general they will face different payoffs. For instance, an accomplice could be quicker to take a vague hint to gain the payoffs of collusion, while a cop with less to gain could be more reluctant to punish what might be an innocent remark.

To illustrate this model with our experimental game, consider a schemer who decides to take and is choosing a message with directness d to send to the accomplice. Their payoff is the expected benefit of colluding with the accomplice, which depends on the directness of the message, $B(d)$, minus the expected cost of punishment from the cop, which also depends on directness, $C(d)$, as well as the cost of taking which was 10. Thus, the schemer's payoff is $y = B(d) - C(d) - 10$. The schemer's optimal directness, d^*, will satisfy the first-order condition: $B'(d^*) = C'(d^*)$

We can estimate the functions $B(d)$ and $C(d)$ to calculate the optimal directness in the present experiments. We estimate $B(d)$ with a regression of the gains from taking as a function of directness and directness squared, allowing for a nonlinear, quadratic relationship with d. We did the same to estimate the cost of punishment, $C(d)$, as a quadratic function of directness.

Figure 4: Optimal directness



Notes: This plot uses the responses in the game to trace the benefit and cost of a proposal's directness. The vertical line indicates where the schemer would have the highest expected payoff.

The two fitted curves are shown in Figure 4. In this example, the benefit of attempting to collude with the accomplice is nonlinear with decreasing returns up to a directness of about 5 on a 7- point scale, while the cost of punishment is closer to a linear function of directness. In other words, coordination with the accomplice improves with greater clarity until the message is moderately vague, at which point further clarity does not improve coordination further. Particularly, in this game the schemer's optimal directness was about 5.3 points on a 7-point scale, which is close to the observed average of 5.6 among schemers who took. Thus, schemers could speak vaguely to receive less punishment from the cop without harming their coordination with the accomplice.

The advantages of vague speech can also be modeled in a signaling game with noise. In Appendix A, we present a signaling model of vague speech, building on the signaling model of Crawford and Sobel (1982) and models of noisy signaling and vagueness such as Blume et al. (2007) and Blume and Board (2014). In the model, the accomplice and cop do not know the schemer's type: The schemer could be innocent, meaning they always pass, or opportunistic, meaning they take whenever they can persuade the accomplice to take.

The schemer sends a message to the accomplice which is also observed by the cop. But the message is noisy so some "pass" messages become garbled into "vague" messages. Thus, some innocent schemers will send vague messages unintentionally, and this noisy background provides cover for an opportunistic schemer to send a vague message that hints at taking. Generally, the presence of noise is grounded in a fundamental observation from the literature on pragmatics (Sperber and Wilson, 2002) A speaker's sentence does not fully describe what they mean, but rather gives the receiver enough content to guess the meaning in light of the receiver's knowledge. For example, people often use vague, generic language for efficiency, such as saying "I did it!" which requires the receiver to apply their knowledge of the situation to infer what goal the speaker accomplished.

Moreover, the cost of misjudging the schemer's type as opportunistic is greater for the cop than the accomplice. The cop's greater cost of mistakes reflects the moral aversion to falsely accusing the innocent, as illustrated by the legal principle of Blackstone's ratio: "It is better that ten guilty persons escape than that one innocent suffer" (Blackstone, 1830).

The signaling model shows that under these conditions, opportunistic schemers can profit from vague speech, which prevails in some equilibria depending on the amount of noise and the proportion of opportunistic and innocent schemers.

In sum, Adam Smith seems to be right that people are quite adept at collusion. Colluders can coordinate an illicit deal not only with cheap talk but even with vague talk. The strategic speaker chooses just what to say and what not to say depending on who could be listening.

References

Actavis Holdco v. State of Connecticut, et al., *RESPONDENTS' APPENDIX TO BRIEF IN OPPOSITION TO PETITION FOR WRIT OF CERTIORARI*, 2019, *No. 19-1010.* https://www.supremecourt.gov/DocketPDF/19/19-1010/143248/20200511173301026_39614%20pdf%20Gordon%20app.pdf.

Agranov, Marina and Andrew Schotter, "Ignorance is bliss: an experimental study of the use of ambiguity and vagueness in the coordination games with asymmetric payoffs," *American Economic Journal: Microeconomics*, 2012, *4* (2), 77–103.

Aumann, Robert, "Nash-Equilibria are not Self-Enforcing," in "Economic Decision Making: Games, Econometrics and Optimisation (J. Gabszewicz, J.-F. Richard, and L. Wolsey, Eds.)," Amsterdam: North-Holland, 1990.

Awaya, Yu and Vijay Krishna, "On communication and collusion," *American Economic Review*, 2016, *106* (2), 285–315.

Berinsky, Adam J, Gregory A Huber, and Gabriel S Lenz, "Evaluating online labor markets for experimental research: Amazon. com's Mechanical Turk," *Political analysis*, 2012, *20* (3), 351–368.

Blackstone, William, *Commentaries on the Laws of England*, Vol. 2, Collins & Hannay, 1830.

Blume, Andreas and Oliver Board, "Intentional vagueness," *Erkenntnis*, 2014, *79* (4), 855–899.

__ **, Oliver J Board, and Kohei Kawamura**, "Noisy talk," *Theoretical Economics*, 2007, *2* (4), 395–440.

Brown, Penelope and Stephen C Levinson, *Politeness: Some universals in language usage*, Vol. 4, Cambridge university press, 1987.

Camerer, Colin F, *Behavioral game theory: Experiments in strategic interaction*, Princeton university press, 2011.

Charness, Gary, "Self-Serving Cheap Talk: A Test Of Aumann's Conjecture," *Games and Economic Behavior*, November 2000, *33* (2), 177–194.

__ **and Martin Dufwenberg**, "Promises and partnership," *Econometrica*, 2006, *74* (6), 1579–1601.

Cooper, Russell, Douglas V DeJong, Robert Forsythe, and Thomas W Ross, "Communication in the battle of the sexes game: some experimental results," *The RAND Journal of Economics*, 1989, pp. 568–587.

_ , _ , _ , and _ , "Communication in coordination games," *The Quarterly Journal of Economics*, 1992, *107* (2), 739–771.

Crawford, Vincent P., "New Directions for Modelling Strategic Behavior: Game-Theoretic Models of Communication, Coordination, and Cooperation in Economic Relationships," *Journal of Economic Perspectives*, November 2016, *30* (4), 131–50.

Crawford, Vincent P and Joel Sobel, "Strategic information transmission," *Econometrica: Journal of the Econometric Society*, 1982, pp. 1431–1451.

Dolcefino, Wayne, "Sex for Diploma Offer Caught on Tape, by Wayne Dolcefino, ABC 13," 2008. [Online; accessed 10. Sep. 2022] https://web.archive.org/web/20200927145228/https://abc13.com/archive/6085999/.

Dugar, Subhasish and Quazi Shahriar, "Restricted and free-form cheap-talk and the scope for efficient coordination," *Games and Economic Behavior*, 2018, *109*, 294–310.

Farrell, Joseph and Matthew Rabin, "Cheap talk," *Journal of Economic perspectives*, 1996, *10* (3), 103–118.

Grice, Herbert P, "Logic and conversation," in "Speech acts," Brill, 1975, pp. 41–58.

Lee, James J and Steven Pinker, "Rationales for indirect speech: the theory of the strategic speaker.," *Psychological review*, 2010, *117* (3), 785.

Lipman, Barton L, "Language and economics," in "Cognitive Processes and Economic Behaviour," Routledge, 2012, pp. 75–93.

Morris, Stephen, "Political correctness," *Journal of political Economy*, 2001, *109* (2), 231–265.

Nevada Appeal, "State senator leaves message to rape victim's sister," May 2010. [Online; accessed 10. Sep. 2022] https://web.archive.org/web/20220910183931/https://www.nevadaappeal.com/news/2010/may/27/state-senator-leaves-message-to-rape-victims-siste/.

Nguyen, Tuan An, "AMD, Nvidia Conspire to Price Fixing; Sued," *Tom's Hardware*, September 2008.

Pinker, Steven, "The evolutionary social psychology of off-record indirect speech acts," 2007.

_ , Martin A Nowak, and James J Lee, "The logic of indirect speech," *Proceedings of the National Academy of sciences*, 2008, *105* (3), 833–838.

Rubinstein, Ariel, *Economics and language: Five essays*, Cambridge University Press, 2000.

Simons-Duffin, Selena, "3 abortion bans in Texas leave doctors 'talking in code' to pregnant patients," *NPR - Shots*, 2023. https://www.npr.org/sections/health-shots/2023/03/01/1158364163/3-abortion-bans-in-texas-leave-doctors-talking-in-code-to-pregnant-patients.

Smith, Adam, "An inquiry into the nature and causes of the wealth of nations: Volume One," 1776.

Sperber, Dan and Deirdre Wilson, "Pragmatics, modularity and mind-reading," *Mind & language*, 2002, *17* (1-2), 3–23.

US SEC v. Nellore et al, 2019, *5:19-cv-08207*. https://www.sec.gov/litigation/complaints/2019/comp-pr2019-261.pdf.

A Model

Our goal in this model is to show that an opportunistic schemer can use vague messages to successfully coordinate with the accomplice and avoid punishment by a cop.

There are two key ingredients. The first is noise: due to noise in communication, the cop and accomplice are wary of acting on vague messages because they might be the garbled messages of innocent schemers who choose to pass. As mentioned in the Discussion, research on pragmatics shows that some noise is inherent in language. Communication relies on many shared assumptions.

The second is an asymmetry in the costs of false positives. Both the accomplice and cop suffer if they act on the mistaken belief that the schemer chose to take. However, the cost of a false positive is higher for the cop. This asymmetry represents people's aversion to punishing the innocent as captured by the legal principle, Blackstone's ratio (Blackstone, 1830), and the legal requirement that a conviction requires evidence "beyond reasonable doubt."

Setup In our three-player game, the schemer chooses a message to send to the accomplice, the accomplice chooses whether to take based on the message, and the cop chooses whether punish based on the message. The schemer is one of two types: opportunistic (with probability p_o) or innocent (with probability $1 - p_o$). The schemer's action is determined by their type: the opportunistic schemer takes whenever they persuade the accomplice to take and passes otherwise; the innocent schemer always passes. Since their action is determined by type, we model only the schemer's choice of message. The schemer chooses a message from {pass, vague, take}.

If the accomplice chooses to take in response to an opportunistic schemer, both earn a reward. The accomplice gains nothing from taking with an innocent schemer while still paying the cost of taking. The cop gains utility from punishing opportunistic schemers and loses utility from punishing innocent schemers. (The accomplice and cop do not have types.)

Payoffs

- The **innocent schemer** always passes, so they just want to send a message that avoids punishment. Their utility is the punishment P the cop chooses as a function of their message d:

$$U_i(d) = -P(d)$$

- The **opportunistic schemer** profits by getting the accomplice to take. Their profit Π_s from coordination depends on the message d that they send the accomplice (by affecting their choice):

$$U_o(d) = \Pi_s(d) - P(d)$$

  $\Pi_s(d)$ is a positive amount if the accomplice takes (the reward minus the cost of taking), and 0 if the accomplice passes. The punishment $P(d)$ imposes a cost if the cop punishes and is 0 otherwise.

- The **accomplice** chooses whether to take. Taking costs C. They earn a profit Π_a from taking if the schemer is opportunistic, while they earn nothing and pay C if they attempt to take with an innocent schemer. Their payoff from passing is 0. So if they believe with probability p that the schemer is opportunistic, their expected utility from taking is:

$$U_a(\text{take}) = p * \Pi_a - (1-p) * C$$

Therefore the accomplice will take if $U_a(\text{take}) > 0$, or

$$\frac{p}{1-p} > \frac{C}{\Pi_a}$$

- The **cop** makes a binary decision to punish the schemer or abstain. They earn J for justly punishing an opportunistic schemer, and they pay the cost F for falsely condemning an innocent schemer. So if the cop believes with probability p that the schemer is opportunistic, their expected utility from punishing is:

$$U_c(\text{punish}) = p * J - (1-p) * F$$

  The cop will *abstain* from punishing if

$$\frac{p}{1-p} < \frac{F}{J}$$

- Combining these conditions, opportunistic schemers can coordinate with accomplices while eluding punishment by cops if:

$$\frac{C}{\Pi_a} < \frac{p}{1-p} < \frac{F}{J} \tag{1}$$

  In other words, the odds that the schemer is opportunistic are high enough to compensate the accomplice for the cost of taking, but low enough that the cop is worried about the chance of a false conviction.

Messages To simplify the messages, let the schemer's potential communication be:

$$d \in \{\text{pass}, \text{vague}, \text{take}\}$$

There is some noise in communication. With some probability $\delta \in (0,1)$, "pass" messages become "vague." But "vague" messages stay that way.

Assumptions We will show that vagueness is an optimal strategy as long as two assumptions are met. The first assures that the payoffs facing the accomplice (C and Π_a) and cop (F and J); the noise term δ; and the probability of an opportunistic schemer p_o are such that, when both players update their beliefs optimally, they put the odds that the schemer is opportunistic in the interval outlined in condition (1) above.

It also includes the assumption that the cost of false positives is higher for the cop: It is worse for the cop to punish an innocent schemer than it is for the accomplice to try to coordinate with an innocent schemer. Without this, cops would be more likely to act compared to the accomplice for any probability that the schemer is opportunistic, so there would never be coordination.

Note that assumption this depends on the probability of an opportunistic schemer, p_o, and not the beliefs of the accomplice and cop, which we denote with p. We show the connection between the two below.

1. $$\frac{C}{\Pi_a} < \frac{p_o}{(1-p_o)*\delta} < \frac{F}{J}.$$

2. The schemer loses more from punishment than they gain from coordination, so the opportunistic schemer cannot profit from sending the clear message to take:

$$P > \Pi_s.$$

Proposition 1. *A perfect Bayesian equilibrium exists where opportunistic schemers get away sending vague messages. The strategy profile is as follows:*

- *Innocent schemers: send "pass" message*
- *Opportunistic schemers: send "vague" message*
- *Accomplice: pass if the message is "pass," otherwise take*
- *Cops: punish only "take" message*
- *Cops and Accomplices use Bayes' rule to form beliefs about the type of the schemer (given below)*

Proof. Assume that innocent schemers send "pass" messages and opportunistic schemers send "vague" messages. If the cop and accomplice see a "pass" message, then they believe the schemer is opportunistic with probability:

$$P(opportunistic|\text{"}pass\text{"}) = 0$$

So the accomplice passes and the cop abstains from punishment.

If the accomplice and cop see a "vague" message, then they believe the schemer is opportunistic with probability:

$$P(opportunistic|\text{"}vague\text{"}) = \frac{p_o}{p_o + (1-p_o)*\delta}.$$

This belief differs from when they see a "pass" message because some innocent schemers will have their "pass" message garbled into "vague" with probability δ. Thus the odds that an opportunistic schemer sent the message are $\frac{p_o}{(1-p_o)*\delta}$. By Assumption 1, this makes it worth it for the accomplice to take, but not for the cop to punish.

Finally, if the accomplice and cop see "take" then their correct beliefs are:

$$P(opportunistic|\text{"}take\text{"}) = 1,$$

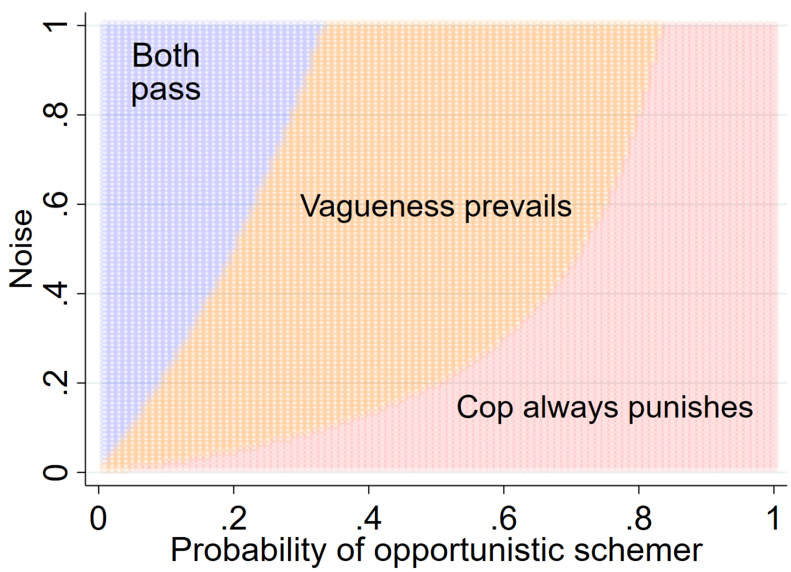
so the accomplice would take and the cop would punish. Opportunistic schemers would not send "take" given the condition above, $P > \Pi_s$. Finally, the opportunistic schemer would not send "pass" because their expected utility from "pass" is just $\delta\Pi_s$, which is less than their expected utility from "vague," Π_s.

$\square$

Illustration Figure A1 shows how relaxing the assumptions changes the presence of an equilibrium with vague speech. We fix the relative profit of the accomplice at $C/\Pi_a = 1/2$ and the costs of false positives for the cop at $F/J = 5$, and we assume the innocent schemer always sends "pass." Then we plot the points (p_o, δ) where vagueness can prevail.

When the probability of opportunistic schemers p_o is low (< 0.20), noise hurts coordination because the accomplice becomes less sure that the schemer is opportunistic. For example, if the probability of an opportunistic schemer is 0.20 but the noise δ is 0.60, then the accomplice and cop both pass because the chance the schemer is opportunistic becomes too low. However, the large orange area in the middle shows combinations where vagueness prevails: the accomplice is confident enough to take, but the cop is not sufficiently sure to punish. Finally, the red area at the right shows when the cop is sure enough to punish. When noise is sufficiently low, there is little uncertainty about which type of schemer sent a vague message. And when the share of opportunistic schemers is high enough, the cop will always punish—even with maximum noise.

Figure A1: Model illustration



Notes: This plot shows when vagueness is an equilibrium in our signaling model. We fix the relative profit of the accomplice at $C/\Pi_a = 1/2$ and the costs of false positives for the cop at $F/J = 5$. In the "both pass" region, the accomplice will abstain from taking and the cop will abstain from punishing in response to a vague message. In the "vagueness prevails" region, the accomplice takes but the cop passes in response to a vague message. In the lower right region, the cop always punishes vague messages.

Extension This model can be adjusted to capture a two-player game where the schemer sends a message to a receiver who has two types: either an accomplice with probability p_a or a cop with probability $1 - p_a$. This models situations with two players such as a driver who offers a vague bribe to a cop who might be upstanding or crooked, or suitor who hints at romantic overtures to a receiver who may reciprocate or decline the gesture (Pinker et al., 2008; Blume and Board, 2014).

The cop and accomplice face the same payoffs as in the three-player model. The opportunistic schemer still gets higher expected utility from sending a "vague" message compared to a "pass" message because:

$$p_a \Pi_s > \delta p_a \Pi_s$$

and

$$p_a \Pi_s > p_a \Pi_s - (1 - p_a) P$$

so their optimal strategy is still to send "vague."

B Appendix

Table A1: Messages and ratings from Experiment 2

Message	Rating	N Ratings
Don't take!	1.00	10
I think we should just let person A have their original amount and not take from them. Lets pass on it.	1.00	9
Hello	1.00	7
hello	1.09	10
How are you doing?	1.11	9
I am going to just take the original 40 cents.	1.13	9
Hi	1.18	9
Good day friend! Hope you're having a good day	1.22	9
Hi I guess there isn't much I can do to help you make your decision. I just hope you have fun with the task. Take care	1.40	9
will you take or pass?	1.74	7
This is a great team that we're working with. I hope we all make out well	1.79	9
Hi! I hope you enjoy the game. Good luck :)	1.81	9
Good luck! :)	1.94	9
I trust in you please help	2.20	7
Hopefully this works out for both of us	2.41	7
I will respect any decision that you make. It is a tough choice.	2.43	9
I hope we can all make a good amount of money with this task.	2.58	9
Do what you think is best	2.90	9
shall we take it?	2.96	9
This is a game and so I will play it as such.	3.13	9
Let's work together to benefit all of us.	3.31	7
I think you should pass take it.	3.77	10
Let's work together! I am sure if we work together it would be mutually beneficial to both of us.	3.77	7
Statistically there is only one answer to choose to give us the closest thing to an equal distribution of money.	3.84	9
I think we know what would benefit both of us the most.	4.07	9
It's the only way to equalize the earnings.	4.11	10
There is only one way we can help ourselves.	4.12	10
If we both take he'll still wind up with more money than either of us have right now.	4.13	7
choose whatever you are comfortable with. i would like to maximize my potential earnings.	4.16	9

please work with me to achieve a good outcome for both of us	4.16	7
I think that taking from person A would make our overall bonus payments more fair. I hope you agree.	4.28	8
Hello! Let's try to maximize our winnings.	4.30	7
Consider that the difference between 150 and 40 is greater than 50 to 80. It's unfortunate that A would end up with less but we would prefer more too	4.37	7
Hey C what's up? I'm going to go with the choice that maximizes our chance of winning.	4.41	8
I never know if these are real so I always feel guilty but this time maybe I'll try for myself just once?	4.51	7
If we both choose Take then we will get more money.	4.55	8
Time to be greedy.	4.59	8
Hi! Let's work together to further OUR goals.	4.60	9
We must work together to achieve the highest possible earnings.	4.63	7
This is a game so lets try to win as much money as we can.	4.80	9
No reason not to take.	4.94	8
If we both take everyone's payment will be more fair.	5.12	10
Taking would only be more fair for us.	5.17	9
If you 'take' we both win :)	5.28	8
You and I are both doing this for extra money seems illogical for us not to take some when given the option.	5.29	7
Person C I really like you but I'm going to take my chances and try to maximize my gains. I'm sure you understand!	5.40	9
It is too our mutual benefit to choose take.	5.40	7
If we both take everyone would be on a more balanced scale then if we don't [150 40 40] is a lot more unfair than [50 80 80].	5.40	9
We should choose to take to maximize our earnings.	5.46	9
I want to take your money I needed it now.	5.47	8
Take the cake dawg	5.63	7
lets work together to earn more money. If you choose TAKE we will get 80 cents instead of 40.	5.68	9
I think we should both choose take so we can get more money.	5.84	7
i will take it	5.86	7
I am going to choose Take. It's the rational decision to maximize our profits.	5.87	7
I am going to take this way we will both get 80 cents if you also take.	5.89	7
I think it would be most fair to everyone to take the 100. It would put two of us even and put A only .30 behind us instead of 110 ahead of 2 people	5.90	9
I'm going to take	5.94	7

I'll take the money	5.96	7
I think we should take!	6.00	7
You should take on your choice.	6.03	9
I think we should both choose take. That will maximize the payment for each of us.	6.07	7
We can make more money if we choose take so I would choose it since the money is bonus anyway	6.10	9
By my reckoning Person A has got more than their fair share. I see no reason we should not work together and seize their treasures.	6.11	7
I think take makes the most sense. (Cents) get it!	6.13	9
Please choose take!	6.15	8
I'm choosing take.	6.20	7
I'm choosing take! =) game on.	6.24	9
I think taking is the most fair way to go for everybody. We also will make more money if we choose Take.	6.27	7
Hello Person C! Let's get money from person A!	6.27	7
If you take and I take too we will both earn double the pay. So choose take and so will I.	6.35	8
I suggest you choose to Take	6.39	7
We should both take so we can earn more money for ourselves.	6.40	7
i choose to take	6.41	9
Hi we should really both try to take money away so we can be successful at this.	6.41	9
I think it's best for us to take person A will still have $0.50 left and it's more fair than person A getting 3 times as much as us.	6.41	7
A possible loss of 10 cents for a gain of 50. Totally doable. I am going to take. I hope you do also.	6.41	7
I think we should take. It was just by chance that neither of us were in the person A position.	6.43	8
I am going to take. It will give us both a bigger bonus if we both do so you should take as well.	6.43	7
Let's take the money!	6.44	9
I think you should pressTake as it has the top earnings for us.	6.52	9
We should both take so we get 80.	6.54	8
Might as well both take and double our money.	6.54	7
I think we should both take to maximize the amount that we make.	6.56	9
HI there I hope all is well. I'm gonna go ahead and take :D	6.56	10
I think we should take because Person A will still receive a fair amount of money but the money will be spread more evenly among the three of us.	6.57	9
Let's take the money.	6.57	9

If we both take it's 80 cents for each of us. Otherwise the most we can get is 40 cents. So I'm taking.	6.57	7
If we both choose take we will get more money. I plan on choosing take. You should do the same so we both get more money!	6.57	7
Let's take the bonus. split the bonus up a little more than how it is now.	6.58	10
Let's work together to take 100 from person A. That way we both make a little extra money and person A will also still make money.	6.59	7
I say we both take	6.61	9
This only works if we both select Take. I still come out ahead even if D decides I've been a bad person. ;)	6.62	10
Hey there. Let's work together well! I'm going to risk it and choose Take.	6.62	9
Choose to take!	6.66	8
i will take. i hope you do as well. this way we can increase our earnings.	6.68	9
I'm going to take. If you take too then we will both profit. I don't think person A is real so it would benefit us to take and we are not taking fr	6.70	7
I plan on taking so that I can maximize my bonus.	6.70	10
Hi there let's take the money!	6.70	9
We should both take.	6.72	10
we should take it to maximize our profit.	6.72	10
I think we should take the money. We have to think of ourselves and how we can earn the most money.	6.72	9
I think we should both choose Take. Let's do it!	6.75	8
You should choose Take option to maximize our profit	6.76	9
I am going to Take because that option most closely equalizes everyone's pay if we both do it!	6.76	10
It's unfair for Person A to make that much more than us. If we both take it'll be a lot more fair. Let's both TAKE! I'mnotabotbtw I'm real.	6.76	8
Hi I think we should both take money from A so that we each get a fair amount.	6.77	7
I am going to take. You should too.	6.78	9
I am going to choose Take for sure. You have my word. I have nothing to gain by telling you I'm going to then not. Please do the same so we profit.	6.79	7
I think we should trust each other and both choose to take in order to receive a higher bonus- Thanks	6.79	7
hi i dont know about you but i am going to take.	6.80	8
I am going to take. If you want more money I'd suggest you take also.	6.80	7
Taking the money is the profit-maximizing strategy. Let's do it so that each of us can maximize out payoff.	6.81	51

Lets both choose to take from A. It will be an easy way to make more money. I promise I will choose this option	6.82	8
We should work together to maximize our bonus. I will choose Take. You should also.	6.83	7
I am taking so you should too.	6.84	7
Let's take Person A's money. They will still end up with 50c and we will receive a little more. We're not taking everything from them.	6.85	8
Let's take.	6.85	31
we must take	6.86	9
Lets make sure we get the most out of this chose take please	6.86	7
I am taking.	6.86	8
Let's take from person A	6.88	8
I'm chosing Take so that yo can also take and we'll both get 80	6.88	9
I am going to take!	6.88	9
I am choosing Take. If you choose Take also we will both maximize our potential earnings. You will make 80 cents vs 40 if you pass. Cheers!	6.89	9
Take take take	6.90	10
Ok lets both agree to take because that results in a higher amount for both of us.	6.90	7
I am selecting Take. It gives us the best payout.	6.90	10
go with take	6.91	7
I'm choosing to take. Fight the power!	6.92	9
If we both choose take then the outcome for all 3 participants will be the most fair. Please select take. Thanks!	6.93	9
chose take	6.94	9
Let's both Take so we can both earn 80.	6.94	9
choose take so that we can both benefit I am selecting take.	6.96	9
If we both decide to take then we maximize our earnings. You should definitely take as I will too.	6.96	9
I am going to select take. You should too! Thanks.	6.96	9
This is simple right? We are here to make a few bucks for ourselves not others. Lets maximize our funds and both pick take.	6.97	9
choose take	6.97	9
Let's TAKE. :D	6.98	9
take	7.00	10
I'm taking no matter what! :)	7.00	8
I'm choosing take. It's the best situation for both of us.	7.00	8
Take!	7.00	9
Take.	7.00	9
Let's both take from A	7.00	9

Hello! I'm choosing to take. Please choose the same option to maximize our gains. Thank you & happy turking! :)	7.00	10
I'm going to choose take.	7.00	8
Going for Take.	7.00	8