

# Can't Buy Me Love? Specific and Diffuse Reciprocity in International Relations

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## Abstract

The notion that powerful states influence their weaker counterparts in international organizations through “vote buying” was first advanced over 40 years ago and has remained a dominant understanding in international relations scholarship. This article challenges this claim by distinguishing between diffuse and specific reciprocity. In the former, recipients align with donors out of strategic loyalty in the absence of their own sincere preferences, while in the latter position shifts take place in response to promises or threats regarding future aid. A game theoretic model, a quantitative analysis, and qualitative interviews are suggestive of strategic loyalty (diffuse reciprocity) being more widespread in the UNGA than tit-for-tat vote-buying (specific reciprocity). While the equalizing institutional designs of international organizations are effective in keeping power differentials from strongly impacting negotiation outcomes, our analysis shows that the dynamics of voting alignment are often driven by the agency of weaker, rather than stronger, states.

**Keywords:** vote buying, diffuse reciprocity, specific reciprocity, United Nations General Assembly, development aid

## **Introduction**

Much of the current discussion in international relations focuses on if, and how, the presence of international institutions can mitigate the effects of international anarchy and promote cooperation among actors. The engaging debate over the “promise” of international institutions has given impetus to an empirical research agenda aimed at determining whether these structures do indeed offer a way out of a materially-dominated, relative-gains world; or if they are simply a new arena in which the powerful can dominate the weak (Mearsheimer, 1994; Keohane and Martin, 1995).

If major powers dominate international institutions, then one should expect the outcomes of international institutions to be in line with the preferences of the strong. The clearest way for the strong to induce the weak into agreement with their preferences is through the threat or use of force. However, since the costs and risks associated with this type of action may often outweigh the benefits, states may use more subtle means to achieve preference alignment—the power of the purse. Since as early as McKinlay and Little (1977), scholars have recognized that states may use foreign aid in pursuit of their own “interests” rather than to address the recipient’s “needs.” This paper addresses an old research question, namely whether powerful states can indeed buy voting support from weaker states, in a novel theoretical, methodological and empirical manner, providing new insights into the possibilities and limits of purse-power in decision-making within international organizations.

As we discuss below, the state of the art of the literature has not arrived at a definite conclusion on if, and to what extent, vote-buying takes place. Not only does current work usually conceptualize vote-buying very broadly as the relationship between static voting alignment among donor and recipient countries, it also does not systematically distinguish between alignment that results from direct inducement versus alignment that may exist for other reasons. This paper makes a theoretical contribution as it introduces a game-theoretic model based on assumptions of incomplete information, communication between the players, and a lack of binding agreements that suggests distinct specific and diffuse reciprocity exchange outcomes between donors and recipients. Specific reciprocity, or vote-buying, is characterized through tit-for-tat exchanges in which recipients shift votes with regards to specific resolutions in exchange for explicitly linked increases in official development aid (ODA); or in which donors reduce ODA in order to sanction deviant voting behavior of recipients. According to our game theoretic model, specific reciprocity exchanges can occur only when donors and recipients have sincere but incompatible policy preferences. In contrast, if the recipient holds

no sincere policy preference for a given issue on the international negotiation agenda, the optimal behavior for recipients is often to engage in diffuse reciprocity wherein they shift their votes into alignment with the position of their principal donor. This signaling of loyalty towards a donor is rational even in the absence of any donor requests to align. Through gradual vote shifts towards donor positions for issues that are not important for a recipient, the former's signal of support can, over time, strategically strengthen the connections between recipient and donor, which in turn is likely to sustain or increase current ODA levels. Thus, diffuse reciprocity is based on a looser link between voting alignment and development aid than specific reciprocity. While voting alignment on the basis of specific reciprocity is in fact vote-buying, voting alignment on the basis of diffuse reciprocity is not.

The paper uses the United Nations General Assembly (UNGA) as an empirical testing ground to examine the extent to which voting alignment between recipients and donors is driven by specific or diffuse reciprocity. The UNGA operates on the basis of a "one member, one vote" principle and has nearly universal membership, which provides scholars with the revealed preferences of nations on a wide range of international topics. The paper utilizes a novel resolution-level dataset that permits analysis of the voting dynamics of specific UN resolutions rather than country-year or ideal-point voting alignment, as is common in the current literature. This is essential to more closely examine the two alternative causal mechanisms of voting alignment specified in the game-theoretic model below.

There are three main findings. First, while allowing for both, our theoretical model and empirical tests suggest that diffuse reciprocity (strategic loyalty) is more widespread than specific reciprocity (vote buying). While most recipient vote shifts towards donors do not resemble instances of vote buying, voting alignments with donor positions based on diffuse reciprocity is common across all recipients. For a given level of aid, diffuse reciprocity is more likely the less sincere the preferences of recipients are. A second important finding is that there is little systematic empirical support for tit-for-tat vote-buying. While both the formal model and the qualitative evidence suggest it may occur, it does not take place sufficiently frequently to be observed statistically. Indeed, the model suggests that specific reciprocity will occur only under stringent conditions, which are not likely to be consistently satisfied in the UNGA. Most importantly, for specific reciprocity to play out, the utility that a donor obtains from voting in alignment with an otherwise non-aligned recipient must be high relative to the aid payment required to induce alignment voting. This is hardly the case in the UNGA in general, with the US being an exception for the resolutions that the US State

Department flags as highly important in a given year.<sup>1</sup> However, these conditions are more likely to be met in the UN Security Council, for which vote-buying has been evidenced (Dreher, Sturm and Vreeland, 2009*b,a*; Kuziemko and Werker, 2006), or in the International Whaling Commission concerning Japan (Dippel, 2015; Strand and Tuman, 2012). Finally, while the paper finds statistical evidence for diffuse reciprocity, these results appear to be driven by recipient behavior towards the United States. When disaggregating by primary donor, the diffuse reciprocity result becomes more pronounced for the United States, but is not evident for the European Union. This suggests qualitative differences in the ways in which recipient countries perceive different donor partners.

The paper first reviews the state of the art in the vote-buying literature before developing a game-theoretic model that distinguishes between specific (vote buying) and diffuse reciprocity (strategic loyalty). The subsequent quantitative section systematically tests the game-theoretic model using a unique dataset on reoccurring resolutions, which allows us to trace vote shifts for specific issues over time. To shed further light on the two mechanisms of recipient vote shifts towards a donor, an additional empirical section presents qualitative interview insights. The paper concludes by elaborating on the implications of the diffuse and the specific reciprocity findings for the promise of power-mitigating institutional design of IOs as well as avenues for future research.

### **Towards a theoretical model of vote buying: Specific and diffuse reciprocity**

Keohane (1967) first advanced the proposition of political influence in the UNGA over 40 years ago. He argued that powerful states had three means of facilitating alignment: “persuasion,” “promises,” and “threats.” The latter two of these approaches, promises and threats, have been subsequently operationalized through the promise to give, or equivalently, the threat to remove foreign aid in a tit-for-tat exchange. As noted by both Wang (1999) and Dreher, Nunnenkamp and Thiele (2008), the empirical results from the first-generation of UNGA voting studies (Kato, 1969; Alpert and Bernstein, 1971; Wittkopf, 1973; Rai, 1980; Kegley and Hook, 1991) were inconclusive and suffered from a number of defects, including insufficient data, improper statistical techniques, and arbitrary selection of time-periods. Moreover, as discussed by Wang (1999), these studies all focused on the Cold War relationship in the UNGA. One could arguably expect a difference in donor behavior with respect to voting alignment in the post-Cold War era, particularly for the United States,

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<sup>1</sup>See <https://www.state.gov/documents/organization/260322.pdf>, accessed: 27.09.2017.

as suggested by Carter and Stone (2015).

While more recent studies have increased the rigor of the analysis, they have not arrived at a consensus concerning the presence and extent of vote-buying. Lundborg's (1998) work points towards vote-buying by both the USSR and US during the Cold War, using an expanded data panel and sophisticated statistical techniques. Wang (1999) restricts his analysis to US "strategic" votes as classified by the US State Department in response to US Public Laws 98-164 and 99-160 and finds support for US vote-buying behavior. Similarly, Alesina and Dollar (2000) argue that the US buys support in the UNGA by using bilateral aid. Lai and Morey's (2006) as well as Smith's (2016) results suggest that only non-democracies are vulnerable to having their votes bought by the US, whereas Carter and Stone (2015) argue that US vote buying is more effective vis-à-vis democracies. Dreher, Nunnenkamp and Thiele (2008) expand the research program by suggesting that different types of aid, i.e. budget support, program support, project support, loans/grants, tied-untied aid, etc., may be more or less conducive to vote buying. The results support the notion that aid can be used to buy votes, at least when the donor is the US (Dreher, Nunnenkamp and Thiele, 2008).

Moreover, Dreher, Nunnenkamp and Thiele (2008), Carter and Stone (2015), as well as Haege and Hug (2016) note that most UNGA vote-buying research has failed to address what on the surface appears to be significant endogeneity—how do we differentiate vote-buying (strategic preferences in a tit-for-tat exchange) from a "natural" alignment of voting (sincere preferences that result in coincidental overlaps of votes)? This concern is bolstered by Protrafke's (2009) finding that ideology can be used to explain voting alignment between the OECD and the US. Eldar (2008) and Dreher and Vreeland (2011) also find support for vote-buying in the United Nations Security Council (UNSC), either through direct bilateral action or through the influence of International Monetary Fund loans.

To shed further light on the dynamics of vote-buying, the following section develops a game-theoretic model that distinguishes between diffuse reciprocity (strategic loyalty) and specific reciprocity (vote-buying) and presents theoretical expectations as to the conditions under which diffuse and specific reciprocity are more likely to occur. We also derive the main empirically testable implications of the model and articulate the hypotheses that guide our empirical analysis.

### **A Vote-for-aid signaling model**

Our model is a signaling game of asymmetric imperfect information with two players (Banks, 1991; Morrow, 1994; McCarty and Meirowitz, 2007). Player 1 is an aid recipient country ( $R$ ) and player 2 is a donor

country ( $D$ ). The two countries interact with respect to their voting on a UNGA resolution and the payment of aid by the donor to the recipient. The donor seeks to achieve that the recipient votes in line with its preferences. The recipient has private information about its type. Specifically, it knows whether or not its preferences with respect to the UNGA resolution are in line with the preferences of the donor. The donor lacks this information. Player 1 moves first, followed by player 2.

The game begins with nature choosing randomly a recipient type from the set  $\{V_R = V_D, V_R \neq V_D\}$ ; it chooses whether or not the recipient's preferences,  $V_R$ , are in line with the donor's preferences,  $V_D$ . The prior beliefs of the donor about which recipient she deals with are given by the probability distribution,  $p(\cdot)$ . Nature selects a recipient of type  $V_R = V_D$  with probability  $p$  and of type  $V_R \neq V_D$  with probability  $1 - p$ . These beliefs are common knowledge.

The donor always votes in line with her preference. This preference is known to both countries. The recipient observes her type and chooses a message from the set  $\{V_{Rt} = V_{Dt}, V_{Rt} \neq V_{Dt}\}$ ; she decides whether or not to vote in line with the donor on a given UNGA resolution in time period  $t$ . The donor observes the recipient's message, but not its type. Based on the message, the donor chooses an action from the set  $\{A_{Rt+1}, \neg A_{Rt+1}\}$ ; she decides whether or not to promise an aid payment for the future time period  $t + 1$  to the recipient. This ends the game.

The payoffs of the players depend on the recipient type, the message sent by the recipient, and the action taken by the donor.  $0 \leq \lambda \leq 1$  describes the utility of the recipient of voting its sincere preference on a given UNGA resolution,  $V_R$ .  $0 \leq \theta \leq 1$  expresses the donor's utility with respect to the recipient voting in line with her on a given UNGA resolution.  $0 < A_{Rt+1} \leq 1$  is a promised transfer of aid from the donor to the recipient in the next time period.

If the donor promises an aid payment to a recipient with non-aligned preferences, but who voted in line with the donor, she receives  $0 < \pi \leq 1$ .  $\pi$  refers to the additional utility that a donor obtains from increasing the probability that a non-aligned recipient that voted in line with the donor in time period  $t$  will also vote in line with the donor on future occasions if her favorable voting behavior is rewarded with the promise of a future aid payment. One may think of  $\pi$  as capturing the donor's interest in establishing a longer term alignment relationship with the recipient that reaches beyond a one-time collaboration on a particular resolution.  $\pi$  is likely to differ across donors. Donors with large established UNGA voting alliances have a lower  $\pi$  than those who have less UNGA voting allies. Thus,  $\pi$  may capture different donor types based on the size of their UNGA voting alliances.

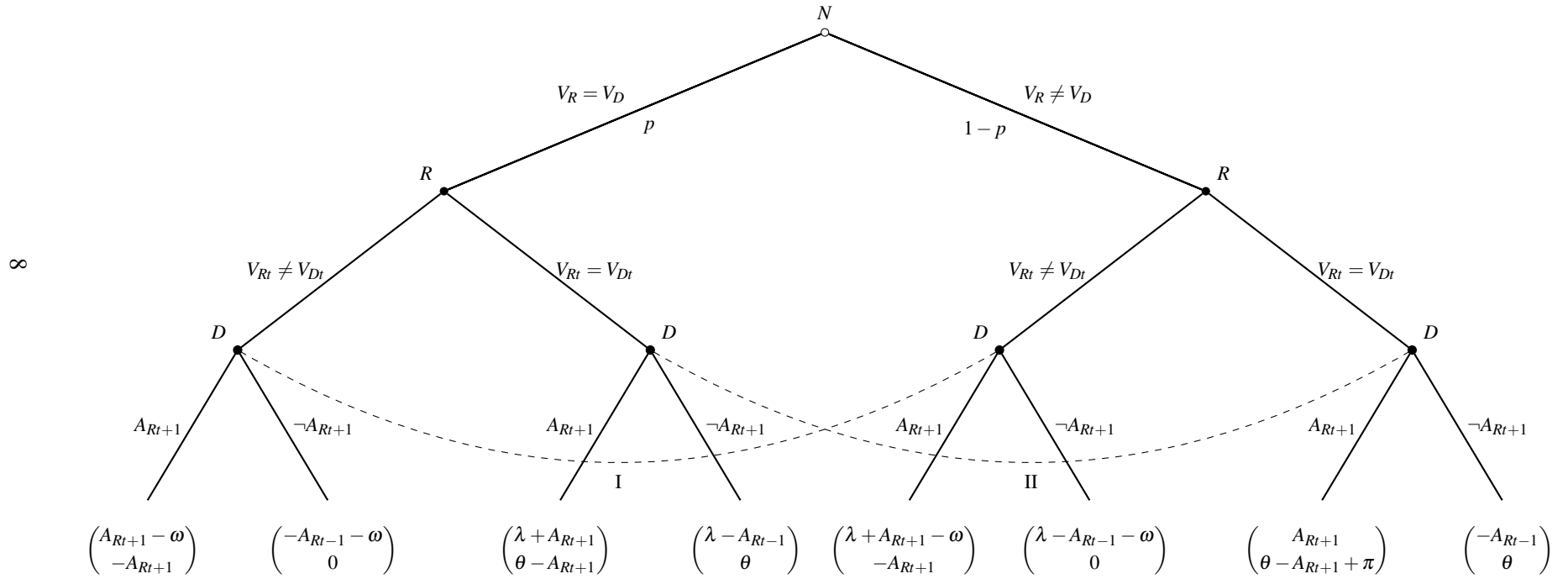
Finally,  $0 < \omega \leq 1$  refers to a cost that the recipient pays for not voting in alignment with the donor that exists in addition to the cost that is generated by the lack of a promised aid payment or the loss of past aid. These costs are, for example, high in situations where there are large groups of states, including the donor, that are in alignment with respect to a particular UNGA resolution, but the recipient still votes against this larger coalition of like-minded states. Being one of few or, in the extreme case, the only country that votes out of alignment may create substantial political, social, and economic costs for a recipient.

There are two scenarios, one in which there was a payment of aid from the donor to the recipient in the past,  $A_{Rt-1}$ , and one in which there was no aid payment in the past,  $A_{Rt-1} = 0$ . The model results in both scenarios are similar. Here, we focus on the case with past aid.<sup>2</sup> Since the donor paid aid to the recipient in the past ( $t - 1$ ), the decision of the donor not to pay aid in the future ( $t + 1$ ) causes the recipient a negative utility of  $-A_{Rt-1}$  because she loses the previously paid aid. We assume  $0 < A_{Rt-1} \leq 1$ . We allow for cases where  $A_{Rt-1} \geq A_{Rt+1}$  as well as  $A_{Rt-1} \leq A_{Rt+1}$ . Figure 1 summarizes the structure of the vote-for-aid signaling game with past aid.

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<sup>2</sup>Model details and results for the case without past aid are available from the authors upon request.

Figure 1. Vote-for-aid signaling game with past aid





## Equilibrium analysis

The equilibrium concept we use to solve the model is perfect Bayesian equilibrium. Our vote-for-aid signaling game with past aid has two equilibria in pure strategies, one fully separating and one fully pooling equilibrium. In the fully separating equilibrium, the recipient with preferences aligned with the preferences of the donor always votes in alignment with the donor, while the recipient without aligned preferences does not vote in alignment with the donor. In the fully pooling equilibrium, both types of recipients vote in alignment with the donor. The model also has a partially separating equilibrium in which the recipient whose preferences are aligned with the donor always votes with the donor and the recipient whose preferences are not aligned with the donor mixes strategies, sometimes voting in alignment and sometimes not voting in alignment with the donor. In our main analysis, we present and discuss the results of the fully pooling and the partially separating equilibrium because they are most informative with respect to diffuse and specific reciprocity. Diffuse reciprocity describes a shift of recipient votes on UNGA resolutions into alignment with the position of their principal donor that is based on strategic loyalty, while specific reciprocity refers to a tit-for-tat exchange of in-alignment voting for an aid payment.<sup>3</sup>

**Full pooling with past aid.** Suppose that the strategy profile in which both recipient types send message  $V_{Rt} = V_{Dt}$  with probability 1 is a fully pooling equilibrium of the vote-for-aid signaling game. Can such behavior be sustained in equilibrium?

In this situation, after observing  $V_{Rt} = V_{Dt}$ , the donor cannot update her beliefs about which type of recipient she is confronted with since both types always vote in alignment. Observing  $V_{Rt} = V_{Dt}$ , the donor responds with  $\neg A_{Rt+1}$  under the following conditions: 1)  $p = 0$  and  $0 < \pi \leq A_{Rt+1}$ ; 2)  $0 < p < 1$ ,  $0 < A_{Rt+1} < 1 - p$ , and  $0 < \pi \leq -\frac{A_{Rt+1}}{(-1+p)}$ ; 3)  $0 < p < 1$  and  $1 - p \leq A_{Rt+1} \leq 1$ ; and 4)  $p = 1$ . The donor responds with  $A_{Rt+1}$  if  $0 \leq p < 1$ ,  $0 < A_{Rt+1} < 1 - p$ , and  $-\frac{A_{Rt+1}}{(-1+p)} \leq \pi \leq 1$ , or if  $A_{Rt+1} = 1 - p$  and  $\pi = 1$ . Thus, in response to the recipient's in-alignment voting, the donor promises an aid payment under some conditions and does not promise an aid payment under others. Observing  $V_{Rt} \neq V_{Dt}$ , the donor's best response is always  $\neg A_{Rt+1}$ .

Is the equilibrium strategy  $V_{Rt} = V_{Dt}$  a best response for both recipient types? Recipient  $V_R = V_D$  sends message  $V_{Rt} = V_{Dt}$  with probability 1. The donor responds with  $\neg A_{Rt+1}$  in the four cases described above. This yields a recipient payoff of  $\lambda - A_{Rt-1}$ . In the other two situations, the donor chooses  $A_{Rt+1}$ , which

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<sup>3</sup>For the detailed proofs of the fully pooling and the partially separating equilibria as well as the fully separating equilibrium, see appendix I.

results in a payoff for the recipient of  $\lambda + A_{R_{t+1}}$ . Deviating from the equilibrium message by sending  $V_{R_t} \neq V_{D_t}$  yields a donor response of  $\neg A_{R_{t+1}}$  and a recipient payoff of  $-A_{R_{t-1}} - \omega$ . If the donor responds with  $\neg A_{R_{t+1}}$  to message  $V_{R_t} = V_{D_t}$ , the recipient never has an incentive to deviate from her equilibrium strategy. If the donor takes action  $A_{R_{t+1}}$  in response to message  $V_{R_t} = V_{D_t}$ , the recipient has no incentive to deviate if  $0 < A_{R_{t-1}} < 1$  and  $A_{R_{t-1}} \leq A_{R_{t+1}} \leq 1$ , or if  $A_{R_{t-1}} = 1$  and  $A_{R_{t+1}} = 1$  in situations of  $A_{R_{t+1}} \geq A_{R_{t-1}}$ . She has no incentive to deviate in situations in which  $A_{R_{t+1}} \leq A_{R_{t-1}}$  if  $0 < A_{R_{t+1}} \leq A_{R_{t-1}}$ . Thus, there are no situations in which a recipient of type  $V_R = V_D$  has an incentive to deviate from her equilibrium strategy.

The recipient  $V_R \neq V_D$  chooses message  $V_{R_t} = V_{D_t}$  in equilibrium. In the four cases outlined above, the donor responds with  $\neg A_{R_{t+1}}$ , which gives the recipient a payoff of  $-A_{R_{t-1}}$ . In the two other cases, the recipient receives donor response  $A_{R_{t+1}}$  and payoff  $A_{R_{t+1}}$ . Deviating with  $V_{R_t} \neq V_{D_t}$  yields payoff  $\lambda - A_{R_{t-1}} - \omega$ . The recipient has no incentive to deviate in the situations in which the donor chooses  $\neg A_{R_{t+1}}$ , if  $0 \leq \lambda \leq \omega$ . In situations in which the donor chooses  $A_{R_{t+1}}$ , there is a broad range of conditions both with  $A_{R_{t+1}} \geq A_{R_{t-1}}$  and  $A_{R_{t+1}} \leq A_{R_{t-1}}$  in which the recipient has no incentive to deviate from her equilibrium strategy.<sup>4</sup> Thus, this fully pooling strategy profile constitutes a perfect Bayesian equilibrium of our vote-for-aid signaling model.

**Partial separation with past aid.** Suppose that the strategy profile in which the recipient type  $V_R = V_D$  sends the message  $V_{R_t} = V_{D_t}$  with probability 1, while the recipient type  $V_R \neq V_D$  sends message  $V_{R_t} = V_{D_t}$  with probability  $q$  and message  $V_{R_t} \neq V_{D_t}$  with probability  $1 - q$  is a partially separating equilibrium. Can such behavior be sustained in equilibrium?

Observing  $V_{R_t} \neq V_{D_t}$ , the donor knows based on Bayes' rule, that  $Pr(V_R = V_D | V_{R_t} \neq V_{D_t}) = 0$ . Thus, observing  $V_{R_t} \neq V_{D_t}$ , the donor's best response is  $\neg A_{R_{t+1}}$  because it yields a payoff of  $0 > -A_{R_{t+1}}$ . Observing message  $V_{R_t} = V_{D_t}$ , Bayes' rule implies for the donor's beliefs to be confronted with recipient  $V_R = V_D$ :

$$Pr(V_R = V_D | V_{R_t} = V_{D_t}) = \frac{p}{p + q(1 - p)}.$$

For recipient  $V_R \neq V_D$ , it implies:

$$Pr(V_R \neq V_D | V_{R_t} = V_{D_t}) = \frac{q(1 - p)}{p + q(1 - p)}.$$

The donor mixes strategies after observing  $V_{R_t} = V_{D_t}$ . Thus, she must be indifferent between  $\neg A_{R_{t+1}}$  and

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<sup>4</sup>For a detailed description of these conditions, see appendix I.

$A_{Rt+1}$  following  $V_{Rt} = V_{Dt}$ . This is the case when the non-alignend type of recipient votes in alignment with probability:

$$q = \frac{A_{Rt+1}p}{(A_{Rt+1} - \pi)(-1 + p)}.$$

Since  $q$  is a probability, it is required to be within the unit interval. Given our assumptions about the parameters in our model, this is given under two conditions: 1)  $0 < A_{Rt+1} < \pi$ ; and 2)  $0 \leq p \leq \frac{-A_{Rt+1} + \pi}{\pi}$ ,  $\pi < A_{Rt+1} \leq 1$ , and  $p = 0$ . These are two necessary conditions for the partially separating equilibrium to hold.

Also the recipient  $V_R \neq V_D$  must be indifferent between her two alternative strategies. If the recipient  $V_R \neq V_D$  chooses message  $V_{Rt} \neq V_{Dt}$ , the response of the donor is  $\neg A_{Rt+1}$  and she receives a payoff of  $\lambda - A_{Rt-1} - \omega$ . With  $r$  being the probability that the donor responds with the promise of an aid payment after observing an in alignment voting, the recipient receives an expected payoff from choosing message  $V_{Rt} = V_{Dt}$  of  $EU_{V_R \neq V_D}(V_{Rt} = V_{Dt}) = rA_{Rt+1} + A_{Rt-1}(1 - r)$ . The recipient is thus indifferent if:

$$r = \frac{\lambda - \omega}{A_{Rt+1} + A_{Rt-1}}.$$

Again, since  $r$  is a probability, we need  $0 \leq r \leq 1$ . Given our assumptions, this is given under a large number of conditions.<sup>5</sup> These are additional necessary conditions of this equilibrium.

Finally, we need to examine whether the proposed equilibrium strategies are incentive compatible for the recipient that is not mixing. The recipient  $V_R = V_D$  sends  $V_{Rt} = V_{Dt}$  with certainty and receives expected payoff  $-A_{Rt-1} + 2\lambda - \omega$ . If she deviates with  $V_{Rt} \neq V_{Dt}$ , she receives payoff  $-A_{Rt-1} - \omega$ .  $-A_{Rt-1} + 2\lambda - \omega \geq -A_{Rt-1} - \omega$  holds always, and therefore the equilibrium strategy of recipient  $V_R = V_D$  is incentive compatible. Thus, under certain conditions, this strategy profile constitutes a perfect Bayesian equilibrium of our model.

## Implications

Our model has several implications that are worth highlighting. Overall, while most recent work argues that strategic voting in the UNGA is less prevalent (Bailey, Strezhnev and Voeten, 2017), our model suggests that the specificities of the strategic interactions between recipients and donors are key to understanding states'

<sup>5</sup>For a detailed description of these conditions, see appendix I.

voting on UNGA resolutions.

In addition, our model suggests that vote alignment is not only driven by the donor, but also depends to a large extent on the recipient and its preferences. We see in all equilibrium results that the recipient's utility of voting its sincere preference as well as the costs it suffers from not voting in alignment with the donor are vital for our understanding of both the donor and recipient behavior. By contrast, in none of the model equilibria does the donor's utility from having the recipient voting in alignment with its preferences,  $\theta$ , figure as important. On the donor's side, it is only the disutility generated by the transfer of aid and the utility generated from establishing longer term cooperative voting relationships with non-aligned recipients that are important for the behavior we observe in equilibrium. Thus, while extant research tends to focus on the importance of the donor in processes of vote buying in the UNGA (Wang, 1999; Dreher, Nunnenkamp and Thiele, 2008; Carter and Stone, 2015), our model emphasizes that both the donor and the recipient are key for understanding the outcomes of donor-recipient strategic interactions in the context of voting on UNGA resolutions.

Furthermore, both diffuse and specific reciprocity may occur in donor-recipient interactions with respect to UNGA resolutions, although the former is likely to occur more frequently. Importantly, this is true for a broad range of parameter values, which suggests that the behavior could be a frequent empirical event. In the fully pooling equilibrium, the recipient whose sincere preferences are not in line with the preferences of the donor votes in line with the donor if the donor takes action  $\neg A_{Rt+1}$  if  $0 \leq \lambda \leq \omega$ . This implies that as long as the non-aligned recipient's sincere preferences provide her a utility that is not larger than the cost she pays for not voting in alignment with the donor, she prefers to vote with the donor although she receives no promise of a future aid payment in exchange. Everything else being equal, this becomes more likely the lower the sincere preference of the recipient country. Thus, under a broad range of conditions, we observe diffuse reciprocity being exercised by the non-aligned recipient and the likelihood of this occurring increases as the non-aligned recipient's preferences become weaker. Importantly, diffuse reciprocity can be driven solely by the preferences of the recipient, irrespective of the donor's preference for short or long-term alignment.

We also observe specific reciprocity in the fully pooling equilibrium. If the donor chooses  $A_{Rt+1}$ , there are conditions related to the utility of the recipient for situations of  $A_{Rt+1} \geq A_{Rt-1}$  as well as  $A_{Rt+1} \leq A_{Rt-1}$  under which the non-aligned recipient votes in alignment with the donor. Importantly, a number of these conditions require  $\lambda$  to be small relative to the amount of promised and past aid as well as the cost  $\omega$ . Thus,

the lower the non-aligned recipient's utility from voting her sincere preference, the more likely we observe specific reciprocity in this equilibrium. Further, for this exchange of vote for aid to occur, we also require the donor's utility from establishing a longer term voting cooperation with a recipient whose preferences are not in line with hers to be high relative to the amount of promised aid. Thus, this tit-for-tat relationship of specific reciprocity occurs under more restricted conditions related to both the utility of the recipient and the donor and is therefore expected to take place less often than diffuse reciprocity in this equilibrium.

Also in the partially separating equilibrium, we observe situations of specific reciprocity in which the recipient with non-aligned preferences votes in alignment with the donor to receive a promise of a future aid payment. The conditions under which this occurs are related to the probability with which the population of recipient countries contains types whose preferences are in line with the donor, the relationship between the donor's utility from establishing a long-term voting cooperation with non-aligned recipients and the promised aid payment, the size of the promised aid payment, the relationship between the recipient's utility of voting its preference and the promised aid payment, and the recipient's disutility of not voting in alignment with the donor that emanates from sources other than the donor's aid payments. It is reasonable to infer that the simultaneous satisfaction of these conditions will again occur less frequently than the conditions that must be satisfied for diffuse reciprocity.

In addition, we can derive several comparative statics from the partially separating equilibrium. Recall that in this equilibrium the donor's probability to respond to a vote in alignment with the promise of an aid payment is  $r = \frac{\lambda - \omega}{A_{Rt+1} + A_{Rt-1}}$ . We can see that  $\frac{\partial r}{\partial \lambda} = \frac{1}{A_{Rt+1} + A_{Rt-1}}$ . Given our assumptions about  $A_{Rt+1}$  and  $A_{Rt-1}$ , this is always positive. Thus, as the utility a recipient receives from voting its sincere preference increases, the donor's likelihood to respond with the promise of an aid payment to an observed in alignment voting increases. In other words, the more the recipient values the utility obtained from voting its sincere preferences, the more likely the donor is to offer a future aid payment. This is intuitive since it is only the high  $\lambda$  recipients that the donor needs to buy off. Recipients with a low  $\lambda$  are more likely to vote in alignment based on diffuse reciprocity and therefore the donor does not need to buy their vote. We also see that  $\frac{\partial r}{\partial \omega} = -\frac{1}{A_{Rt+1} + A_{Rt-1}}$ . This is always negative. Thus, as the cost that a recipient incurs from not voting in alignment with the donor increases, the likelihood of the donor to engage in specific reciprocity decreases.

What do we learn about the recipient's behavior from the partially separating equilibrium? We know that in equilibrium, a non-aligned recipient votes in alignment with the donor with probability  $q = \frac{A_{Rt+1}p}{(A_{Rt+1} - \pi)(-1 + p)}$ . If we take the partial derivative of  $q$  with respect to  $A_{Rt+1}$ , we have:

$$\frac{\partial q}{\partial A_{Rt+1}} = -\frac{A_{Rt+1}p}{(A_{Rt+1} - \pi)^2(-1 + p)} + \frac{p}{(A_{Rt+1} - \pi)(-1 + p)}.$$

Given the assumptions our model makes and the necessary conditions of the partially separating equilibrium, this is positive if  $0 < A_{Rt+1} < \pi$  and  $0 < p < 1$ , and never negative. Thus, as long as the donor's utility from establishing a long term cooperation with a non-aligned recipient is larger than the promised aid payment, the non-aligned recipient's likelihood to vote in alignment with the donor increases as the promised aid payment increases. This is intuitive because the larger the amount of the future aid transfer promised by the donor, the more likely this aid transfer is to pay off the non-aligned recipient for the loss of utility generated by not voting its sincere preference (Finan and Schechter, 2012).

We derive two empirically testable hypotheses from our model, one focusing on diffuse reciprocity and one centred on specific reciprocity. The first hypothesis is about diffuse reciprocity. It is based on the model results that in the fully pooling equilibrium, comparatively insincere recipient preferences relate to a higher likelihood of the non-aligned recipient voting closer to the donor. As long as the recipient's utility of voting its sincere preference is not larger than the cost it incurs from not voting in alignment with the donor, there are situations in which non-aligned recipients vote in alignment with the donor and receive no aid promises in return. The lower the sincere preference of the recipient, the more likely this scenario is to occur. Signaling loyalty or friendship to the donor in these situations is a means to avoid future reductions of aid and might even lead to future aid increases. We hypothesize:

*Hypothesis 1:* The less sincere the preferences of an aid recipient, the higher the probability of vote shifts towards the donor even without the expectation of receiving an aid payment.

Our second hypothesis captures specific reciprocity. Vote-buying based on specific reciprocity can occur when the donor offers a future aid payment which is then responded to by an otherwise non-aligned recipient with a vote in-line with the donor's preference. In such situations, the donor makes a vote-buying offer and promises to pay aid in the future, and the recipient moves towards the donor. If vote-buying occurs, a change in the recipient vote towards alignment with the donor is evidence of tit-for-tat vote buying based on the incentive of a possible future aid payment. This leads to our second hypothesis:

*Hypothesis 2:* If an aid recipient expects future aid payments based on donor promises, it will shift its votes towards alignment with the donor.

### **A quantitative analysis of vote-buying in the UNGA**

This section empirically tests the two hypotheses derived from the theory above using quantitative methods. We develop two sets of specifications, one to test the diffuse reciprocity hypotheses (*H1*) and another to test the specific reciprocity expectations (*H2*). In both instances, we are looking to evaluate movement from recipients of type  $V_R \neq V_D$ , as our formal model has shown that players of type  $V_R = V_D$  will always vote in-line with the donor and therefore would not change their vote towards the donor. With one exception noted below, the models test the relationship between recipient vote-shifts and their primary donor. We determine the primary donor by using the total aid disbursements from the OECD CRS database and calculating each donor's share of ODA for each recipient in each year.<sup>6</sup>

For specific reciprocity, we operationalize the payoff  $A_R$  as the changes in the ratio of ODA to GDP coming from the primary donor in future periods where there is some "baseline" of aid which relates to ongoing aid payments unrelated to UNGA voting behavior.<sup>7</sup> In order to look for specific reciprocity, we consider the partial separating equilibrium where recipients whose preferences are not in line with those of the donor will vote in alignment with the donor as the size of the promised aid payment increases.<sup>8</sup> This is effectively a difference-in-difference approach wherein we look at the changes in voting in relation to the changes in aid.

Alternatively, we operationalize the payoff  $A_R$  as existing levels of the ratio of ODA to GDP from the primary donor to evidence diffuse reciprocity. This draws on the observable implications of the fully pooling equilibrium with past aid where a non-aligned recipient will vote in alignment with the donor without receiving an aid promise in return if  $-A_{Rt-1} \geq \lambda - A_{Rt-1} - \omega$ . The logic here is that the past aid, which may have been given for some non-UNGA related reason, could become part of the donor's utility calculation,

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<sup>6</sup>We identify a total of six primary donors, the United States ( $N = 7,838$ ), Japan ( $N = 5,663$ ), Australia ( $N = 1,440$ ), Canada ( $N = 99$ ), New Zealand ( $N = 60$ ) and the EU ( $N = 35,917$ ). We aggregate all EU donors into one actor as previous work has shown both a high degree of UNGA voting consistency amongst EU states (author, 2013) as well as treating the EU as a single actor in development policy (Holden, 2016).

<sup>7</sup>In the models below we use the change in the ODA/GDP ratio between period  $t$  and period  $t + 1$ . However, we also consider changes between other future periods and find no substantive differences from the results below.

<sup>8</sup>Our specific reciprocity hypothesis is also based on observations that emanate from the fully pooling equilibrium. In this equilibrium, non-aligned recipients vote in alignment with the donor and receive an aid promise in return if the donor's utility from establishing a longer term cooperative voting relationship is high and the recipient's utility from voting its sincere preference is low relative to the amount of past and possible future aid.

in which case the donor would play  $\neg A_{Rt+1}$  if the recipient plays message  $V_{Rt} \neq V_{Dt}$  in period  $t$ . Thus, the recipient is not responding to any “new” or “increased” aid, but rather, moves their vote towards the donor as a result of the “baseline” aid they are receiving and the cost of not voting in alignment.

We operationalize the recipient’s utility from voting its sincere preference,  $\lambda$ , through an overall consistency measure for each state for each resolution.<sup>9</sup> We take this consistency as ex post evidence of the strength of the sincerity of the recipient’s preference for a given resolution. As hypotheses 1 and 2 describe the effect of aid conditional on this term, we operationalize an interactive relationship. The implication from the formal model is that when the recipient’s utility from voting its sincere preference on a given resolution is higher, a given (change in the) ODA to GDP ratio will be less likely to induce movement towards the donor.

Finally, we operationalize the donor’s utility of establishing alignment,  $\pi$ , as the inverse of the percentage of countries that voted in alignment with it on a given resolution in the previous period. We expect the lower the alignment, the higher the utility  $\pi$  of inducing states to vote with them as states face reputational costs of “standing alone”. Thus, we expect lower levels of past alignment to be associated with larger aid payments and leading to a larger likelihood of states moving their vote towards the donor.

We code the dependent variable as a vote shift from the recipient towards its primary donor. In the UNGA there are four possible vote outcomes, “yes”, “no”, “abstain”, and “absent”.<sup>10</sup> However, the recognition that abstention is closer to a match than an opposite vote is valid. We take advantage of the fact that numerous UNGA resolutions are voted upon in multiple time periods and create an original dataset of resolution-level UNGA voting data. Our coding of UNGA resolutions produces 314 distinct resolutions between 1999 and 2009, inclusive, with 116 of those resolutions appearing in more than one GA session.<sup>11</sup> We only consider votes for consecutive resolutions (i.e., the same issue is voted on in consecutive GA sessions). The distribution of the number of shifts are presented in table 2.<sup>12</sup> More information on data sources, including the countries analyzed and coverage levels, can be found in Appendix II.

Given the ordinal nature of the vote choices, we fit a panel ordered logit model with robust standard

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<sup>9</sup>The measure is the ratio of the number of times a state maintained its vote on a given resolution to the total number of times the resolution was voted on in our dataset.

<sup>10</sup>Common practice is to treat “absent” votes as missing observations and that is what we do here. Abstentions have been treated as absences in some cases and as votes in other instances (for a critical review see Bailey, Strezhnev and Voeten (2017)).

<sup>11</sup>Using a title-search algorithm, we identify each unique UNGA resolution from the period 1999 to 2009, inclusive. We then code the vote shifts to identify if, and how, UNGA members change their votes for each of the recurring resolutions. Further discussion of the coding approach and summary statistics can be found in Appendix II.

<sup>12</sup>We code no shift when both the donor and recipient change their votes in tandem.



errors clustered by recipient. Crucially, this model recognizes the underlying ordinal nature of the data (the voting shifts) through its use of a Normal link function. The elements of the voting shifts space are the values  $-1$ ,  $-0.5$ ,  $+0.5$ , and  $+1$ , where  $-1$  signifies a move from alignment to complete non-alignment (e.g. “yes” to “no”) while  $-0.5$  signifies a move from alignment to “abstain” or “abstain” to non-alignment, with the positive elements capturing the shift towards/to alignment. Each vote shift element is attributed a probability of occurrence for a particular set of explanatory variables included in the model specification. A three-dimensional panel is constructed where voting shift is specified as the response variable, and the panel dimensions are Member State, Resolution Code, and Year (reflecting the longitudinal nature of the voting data)

Table 1: Diffuse Reciprocity

	Model I Base	Model II Fixed Effects	Model III United States	Model IV European Union
Primary Donor ODA/GDP ( $A_R$ )	7.329† (1.67)	9.327** (2.59)	12.384** (3.69)	-16.184* (2.47)
Recipient Preference Sincerity ( $\lambda$ )	-1.967** (3.98)	-1.271** (2.80)	-2.413** (2.74)	-2.196** (3.76)
Lag Donor Alignment Utility ( $1/\pi$ )	0.032 (0.29)	0.001 (0.33)	-0.106 (0.26)	0.085 (0.79)
$A_R * \lambda$	-6.888† (1.68)	-9.654** (3.26)	-10.292** (2.60)	15.200* (2.22)
Recipient and Resolution Fixed Effects	No	Yes	No	No
N	51,147	51,147	7,818	33,623
Log Pseudolikelihood	-6483.03	-6080.40	-1069.55	-4529.25

Absolute value of z score in parentheses. \*\* 0.01, \* 0.05, † 0.1

We first present a random effects specification with only the elements of the formal model. We also assess a model that includes recipient and resolution fixed effects, to control for any unobserved heterogeneity in either of those panel dimensions. In Appendix III, we consider specifications that add controls that have been commonly employed in previous studies on vote-buying. In order to control for recipient country capacity as suggested by (author, 2015), we include logged measures of per capita GDP and population. We also control for regime type and regime change, as is done in author (2015) and Bailey, Strezhnev and Voeten (2017). While Smith (2016) investigates leadership change, we focus on the more forceful shock of regime change as Smith (2016) largely found null results between leadership change and changes in voting affinity in the absence of interactions. As shown in Appendix III, the coefficients on our model elements for the base and control models are nearly identical when using the control sample. To ease interpretation of the interaction between aid payment and recipient preference sincerity, we plot the relationship from the baseline diffuse and specific reciprocity models in figures 2 and 3, respectively.

The empirical results in models I-II and V-VI in tables 1 and 2 provide qualified support of our theoretical expectations. In the baseline random effects diffuse reciprocity model (I), there is weak evidence that the level of a primary donor’s ODA/GDP (diffuse reciprocity) induces movement towards the donor’s posi-

Table 2: Specific Reciprocity

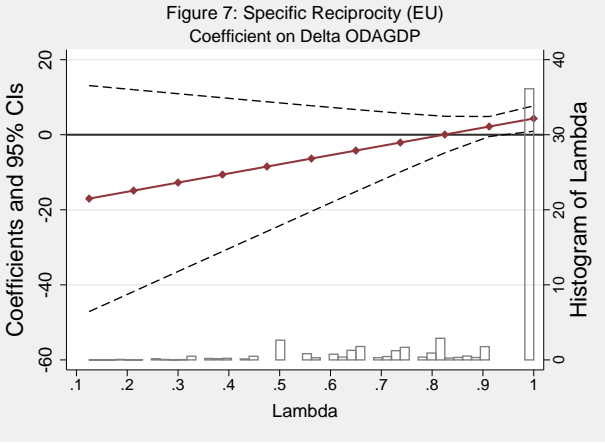
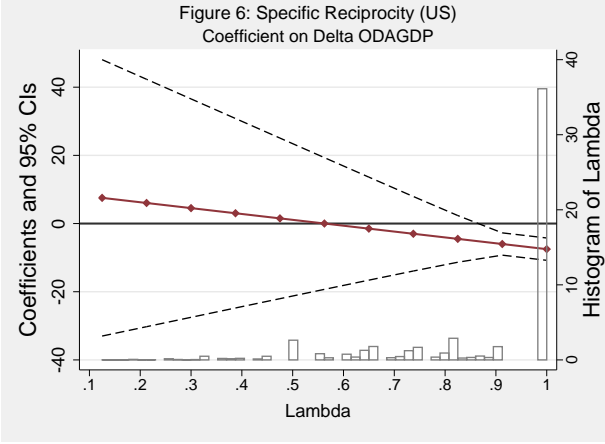
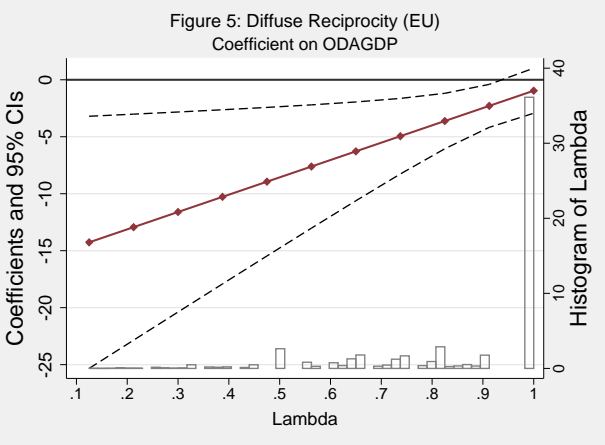
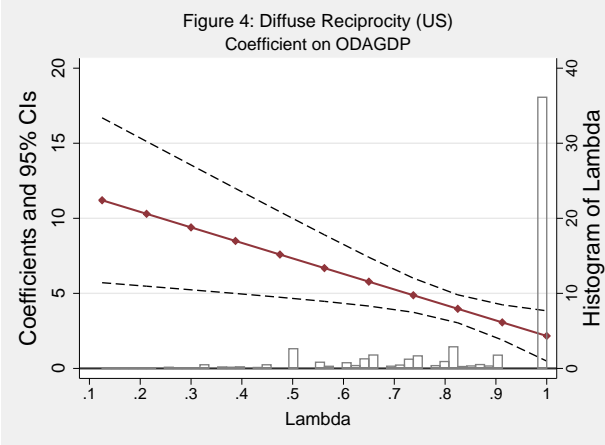
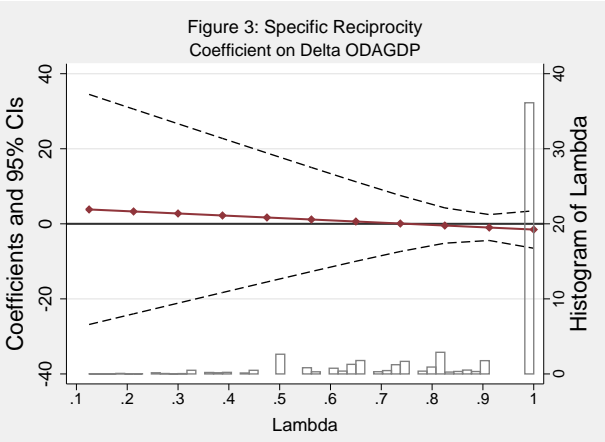
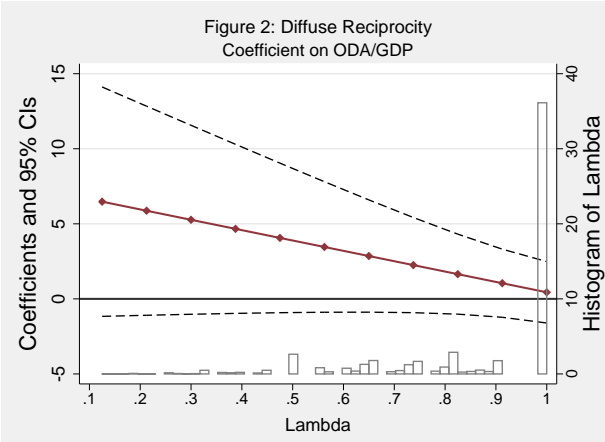
	Model V Base	Model VI Fixed Effects	Model VII United States	Model VIII European Union
F $\Delta$ Donor ODA/GDP ( $\Delta A_{Rt-1}$ )	4.595 (0.25)	10.444 (0.71)	12.574 (0.69)	-18.091 (1.34)
Recipient Preference Sincerity ( $\lambda$ )	-0.466 (0.89)	-0.475 (0.76)	-3.993** (5.47)	-1.712** (3.31)
Lag Donor Alignment Utility ( $1/\pi$ )	0.047 (0.30)	0.000 (0.10)	-0.280 (0.77)	0.088 (0.85)
$\Delta A_{Rt-1} * \lambda$	-6.120 (0.31)	-11.760 (0.73)	-19.505 (0.97)	21.451 (1.46)
Vote Buying Controls	No	No	No	No
Recipient and Resolution Fixed Effects	No	Yes	No	No
N	38,980	38,980	7,377	32,822
Log Pseudolikelihood	-4680.46	-4525.49	-1061.00	-4491.12

\*\* 0.01, \* 0.05, † 0.1

tion, conditional on the level of recipient country preference sincerity. However, when adding country and resolution fixed effects, these relationships become statistically significant at the 1% level. This indicates that there is at least some diffuse reciprocity behavior. Conversely, there is much less support for the claim that changes in the primary donor's share ODA/GDP (specific reciprocity) lead to movements towards the primary donor as the results are statistically insignificant across both the random effects (V) and fixed effects (VI) models. Examination of the plotted interactions based on the random effects models (I and V) echoes these findings. There is a weakly negative trend-line in figure 2 on the impact of diffuse reciprocity, but at no value of lambda is the coefficient on ODA/GDP statistically significant at the 5% level. With respect to specific reciprocity, the plotted interaction is nearly flat, nearly zero, and nowhere statistically significant. That we find qualified evidence of diffuse reciprocity, but no statistical evidence of specific reciprocity, is consistent with our theoretical model which has fewer, and arguably more stringent, equilibria for specific reciprocity.

### Donor heterogeneity in specific and diffuse reciprocity?

Despite the findings above, we are not yet ready to declare that specific reciprocity is a non-event in the UNGA, especially given our formal expectation. Indeed, while our empirical models account for multiple donors by identifying and testing the formal model's hypotheses against each recipient's primary donor in a given year, the formal model is based on the assumption that there is only one donor and one donor-type. While introducing multiple donor types into the model would add substantial complication that goes beyond the scope of this manuscript, our formal model is suggestive of different types of donors, depending on heterogeneity in the utility that the donor countries receive from having countries vote in alignment with them. A plausible assumption would be that for a given resolution, donors voting in a significant



minority would have higher utility from an additional country voting with them compared to a donor who is voting with a large majority. If donors systematically voted with the minority or the majority across many resolutions, then this may be suggestive of different “types” of donors who may have an incentive to be more or less instrumental in their use of aid.

We operationalization the utility donors receive from countries voting with them on resolutions over time,  $\pi$ , as the proportion of countries voting with the primary donor in the previous period on the resolution. While this was not statistically significant in any of the models, looking at descriptive statistics suggests that the US has systematically lower levels of voting alignment across all resolutions, with a mean  $\pi$  of 0.206, compared to other donors, in particular, the EU countries with a mean  $\pi$  of 0.618. This may suggest that the US and EU have incentives to behave qualitatively differently in their instrumental use of ODA, or that other countries may perceive that the EU and US would behave differently in their use of ODA. The existing empirical literature adds strong credence to this implication from our model as it is strongly suggestive that donors differ in their instrumental use of aid (Berthelemy, 2006; Kilby and Dreher, 2010; Hoeffler and Outram, 2011; Brazys, 2013), including in the UNGA (Dreher, Nunnenkamp and Thiele, 2011). In particular, the United States has long been suggested to be more instrumental in its use of aid compared to other donors, not the least of which being European countries and the EU. Thus, while our model did not explicitly consider different types of donors, we investigate these donors in models III and IV in table 1 for diffuse reciprocity and models VII and VII in table 2 for specific reciprocity in tables one and two above, while presenting the plotted interaction results in figures 4 to 7.

The results in figure 4 are stark. With respect to diffuse reciprocity, instead of statistically insignificant interactions, we now see the expected relationship between the impact of levels of ODA/GDP on moves towards the primary donor and lambda when the US is the primary donor (diffuse reciprocity). The coefficient on levels of ODA/GDP is statistically significant across all values of lambda, although the magnitude of this impact diminishes as the sincerity of the recipient’s preference increases. The coefficients in tables 1 and 2, and in figures 2 to 7, are the log odds that a country moves to the higher ordered category given a one-unit change in the level of a primary donor’s ODA/GDP, *ceteris paribus*. Figure 4 shows that when a recipient country has completely insincere preferences ( $\lambda = 0$ ), the log odds ratio of moving towards the donor, given a one-unit difference in donor’s level of ODA/GDP<sup>13</sup>, is 12.384. For a 0.01 difference in the ODA/GDP ratio (1% of GDP), this translates to an odds ratio of 1.132, meaning that a country is 13%

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<sup>13</sup>So moving from no aid to aid equal to GDP.

more likely to move towards the donor on that resolution.<sup>14</sup> As  $\lambda$  increases, this likelihood falls, and when  $\lambda = 1$  the log odds fall to 2.092, with an odds ratio of 1.021, meaning the country is only 2% more likely to move towards the donor on that resolution given a 0.01 difference in the level of ODA/GDP. These findings are strongly supportive of our diffuse reciprocity hypothesis with respect to the US and are robust to a number of different model choices as well as lags of ODA/GDP, as shown in Appendix III. Moreover, these results support the implication that it is recipient agency that accounts for diffuse reciprocity. When the sincerity of a recipient’s preferences on a given resolution are low, they pay very little cost to move into alignment with the donor and may be enticed to do so even at low levels of ODA from the donor. To achieve the same odds ratio at  $\lambda = 1$  as when  $\lambda = 0$ , the donor would have to provide nearly 6 times as much aid<sup>15</sup>.

In contrast, figure 5 shows the opposite relationship when the EU is the primary donor, with a statistically significant and negative sign on ODA/GDP that is increasing in  $\lambda$ . We give this result a twofold interpretation. First, we think it is a substantial indication of the qualitatively different perceptions of donors by their recipients. Remembering that diffuse reciprocity is recipient-initiated based on existing aid from the primary donor, if recipients think there is heterogeneity in how those donors may alter their existing aid, then they will behave differently towards different donors. This observation is coupled with the fact that the model only captures the relationship between a recipient and a single donor. In reality, a move “towards” one donor is often a move “away” from another. Indeed, in the UNGA, a move towards the US is many times a simultaneous move away from the EU. We suspect this is what is being captured by figure 5: recipient states are not necessarily moving “away” from the EU in response to higher levels of ODA/GDP but instead are moving “towards” the US—but since the EU is the primary ODA/GDP donor, we see the negative sign on ODA/GDP. We find it quite plausible that the US is perceived by recipients as being more likely to reward/punish states based on their UNGA votes, and indeed our qualitative evidence below supports this claim.

Turning to specific reciprocity, while the signs on the parameter and interaction terms in the US model (VII) are all in the expected direction, none of the relationships are significant. Indeed, as figure 6 shows, at no level of  $\lambda$  is the coefficient on the US change ODA/GDP statistically significant. Likewise, again the EU shows a positive interaction, but one that is also statistically insignificant. Combined with the full model results above, we take this as evidence that specific reciprocity in vote buying, as a general phenomenon, is

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<sup>14</sup>Where  $\exp(12.384 \cdot 0.01) = 1.132$ .

<sup>15</sup>Where the logs odds at  $\lambda = 0$  for a difference of 0.01 ODA/GDP is 0.12384 ( $12.384 \cdot 0.01$ ), to get the same log odds at  $\lambda = 1$ , one needs difference in the level of ODA/GDP of 0.059197, where  $2.092 \cdot 0.059197 = 0.12384$ .

statistically unobservable. To some extent our model anticipates this “non-finding.” The conditions under which specific reciprocity occurs are both less likely and are established in fewer equilibria. We do not take our results to mean that specific reciprocity never occurs, but rather, it occurs with insufficient frequency to be detected by frequentist statistical methods.

The implication from the findings above is significant—observed moves towards aid donors, particularly the US, in the UNGA—are more likely to be a result of recipient-driven diffuse reciprocity than donor-instigated specific reciprocity. Recipients, knowing their preferences and having some idea of donor type will be likely to move into alignment, unasked, when the costs of doing so are low. Conversely, donor-initiated moves, in the form of specific reciprocity, appear much less likely. That diffuse reciprocity is limited to the US suggests there is a perception amongst recipients that the US will reward/punish voting behavior. This perception may well be founded on the experience or hearsay of US specific reciprocity. US-initiated specific reciprocity might also induce a reputational effect which drives recipient-initiated diffuse reciprocity. This interpretation is far more nuanced than the prevailing assumptions that behavior in the UNGA is solely driven by powerful actors. Instead, it seems likely that much of the (re)positioning on resolutions in the UNGA is undertaken by smaller countries on their own accord based on their perceptions of the powerful states.

### **Narratives: Voting alignment as an expression of specific or diffuse reciprocity?**

This section takes a closer look at the specific and diffuse reciprocity logics in presenting narrative evidence. In general, the semi-structured interviews with diplomats from a wide variety of recipient and donor countries, conducted between 2010 and 2012, support the quantitative findings.<sup>16</sup> Diplomats from aid recipient countries report that they have heard about others who have been offered aid in exchange for voting support (specific reciprocity, hypothesis 2).<sup>17</sup> However, none of the interviewees indicated personal experience

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<sup>16</sup>All 192 countries, as well as the EU delegation, have been approached at least twice via email and phone between 2010 and 2012 in order to request an interview (via phone or face to face). Not all countries were willing to give an interview. A total of 166 interviews on negotiation behavior in the UNGA were conducted, several of which focused on voting alignment and the role of financial incentives.

<sup>17</sup>For example, when asked whether the diplomat has ever observed that other countries are approached by major donors trying to use aid in order to obtain vote shifts towards the donor, an interviewee answered, “Oh yes, that does happen. It never happened to us because we’re not a major donor or recipient anymore but I have heard that is the way it’s treated by other countries, some of the Europeans, the way they have approached issues or groups of countries with that mentality, you know what, you better be careful because I’m the one who’s basically paying the salaries in your country’ and that’s tough to take” (interview UNmission#160, 15-03-12). Similarly, “Yeah, the US is very blatant about it. That’s not how we operate, it’s not how they operate with us, particular countries they’ll deal with like that . . . . Because of the fact that we have a relatively strong, stable economy, we have oil and natural gas, we have been able to exercise a certain level of independence than perhaps other small countries who have a much more narrow

with vote-buying efforts, in line with the logic of specific reciprocity. For example, a diplomat from an aid-receiving country who has been posted to New York for a long time stated, “In my capacity as DPR [Deputy Permanent Representative, insertion by authors] I never received that kind of offer” (interview UNmission#164, 19-03-12, also UNmission#161, 16-03-12).<sup>18</sup> Along similar lines, diplomats from the donor side also claim that they themselves do not buy votes, “I don’t think we ever put on the table something like ‘we have been supporting you on this now give us support back on something else’. I doubt that the question has ever been put so bluntly” (interview UNmission#158, 06-03-12). Similarly, asked whether their own country offers other states developmental or economic support specifically in exchange for voting support on a specific UN resolution, a diplomat from a major donor answered “No, never” (interview UNmission#75, 25-03-11, similar UNmission#92, 01-04-11, UNmission#105, 19-07-11, UNmission#157, 02-03-12). Nonetheless, similar to the recipient interviews, rumors about vote-buying are also shared by interviewees from donor countries, “Countries, especially developing countries, they don’t like that you interfere with their internal processes. I think that you have to be very careful. (...), the Americans are probably much less, they have less problems in twisting arms” (interview UNmission#35, 07-03-11).<sup>19</sup>

Apart from systematically increasing the share of aid to “buy” votes, donors might be inclined to threaten with aid reductions in the future if a recipient explicitly refuses support in the UNGA arena. This is the other side of the specific reciprocity coin. In this vein, a diplomat explained, “Yes, what the US can do is to use the carrot and stick of aid. This is one thing. They could say, ‘If you stop doing this, we will stop giving you aid’ ”(interview UNmission#2, 03-06-10).<sup>20</sup> However, when asked whether a donor did at one point

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resource base would have. In our circumstance it’s never been a heavy handed approach.” (interview UNmission#162, 16-03-12).

<sup>18</sup>Similarly, “No, I don’t know of any member state that’s really requesting support like that” (interview UNmission#162, 16-03-12).

<sup>19</sup>Also, “That’s a very delicate question I would say because it’s suggesting you can buy some support for a resolution, for your political goals. I wouldn’t exclude it because it’s life and it’s how things are working and I would be naive to say ‘no it’s just a discussion and you cannot earn support any other way’. But this is very difficult to pinpoint and say ‘yes, that’s the case’ when a given country builds a road somewhere and then got voted for by somebody or got some vote for in a resolution. It’s of course a reality, we all know how it works and the activities of big powers but not only vote here or there in different continents and how do they do this” (UNmission#78, 28-03-11). Another diplomat stated, “I don’t have any firsthand knowledge but you know of course you can’t exclude the fact that they’re giving so much aid, especially to African countries, that it might pay dividends in support if they promise handouts for support in some project they have. It’s a bit ambiguous and it’s hard to say if you’re not inside NAM and don’t see how it goes inside there” (interview UNmission#159, 15-03-12). Similarly, a diplomat from a donor country explained, “Sometimes it seems to happen [...] it is normal enough you try to offer, I don’t know about developmental projects or financial aid, but you offer to negotiate in a more flexible way and to take into account principles or ideas during the negotiation of the resolution. So I would certainly from the point of view of the final result, representing a resolution, you would offer some flexibility, or to take into account positions and so on in the text. If there are other things to offer, well I cannot confirm.” (interview UNmission#92, 01-04-11).

<sup>20</sup>The diplomat did not elaborate on how increases in aid payments are used as means to obtain support in the UNGA, but continued to ponder on means by which rich countries could obtain voting support from poorer ones, “The other thing is to fly people around. Fly people to Washington. Give them visibility. Some countries like to have the visibility of going to Washington, the President of the US is there” (interview UNmission#2, 03-06-10).

reduce developmental aid to sanction deviant voting behavior in the UNGA, none of the interviewees from recipient states reported that they were themselves affected. For example, one interviewee reported, “No, it doesn’t happen to us (...). They try to influence you on human rights, with DPRK, but they use other arguments. Not necessarily cutting aid” (interview UNmission#161, 16-03-12).<sup>21</sup> Interviews from the donor side corroborate this. When asked, “Do you think that if you approached a recipient country for a change of position and they refused there would be implications?” a diplomat responded, “No, that’s okay, I don’t think there will be any implications. They may know what is our thinking and what is our strategy but I don’t think we will have major conflicts.” (interview UNmission#157, 02-03-12).<sup>22</sup>

While the qualitative support for specific reciprocity is weak, indirect, and only tentative in nature, interviewees often point to a more subtle effect of developmental aid on the voting of recipients: Considerations of strategic loyalty based on a diffuse reciprocity mechanism (interviews UNmission#6, 21-10-10, UNmission#162, 16-03-12, interview UNmission#168, 04-12-13).<sup>23</sup> Unlike the aid-for-vote exchange on

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<sup>21</sup>Even small Pacific countries, which usually vote alongside the US, argue that they are not doing so because they seek to avoid future reductions in developmental aid, “Well, those countries depend enormously on aid from the US, their policy is aligned to the US, so I don’t think it’s a question of aid, if you look at the pattern of voting, it’s consistent. It’s Marshall Islands, they always vote in the same way, so I don’t think it’s a question that they are pressured by the aid, more that their political, their foreign policy is aligned with that of the US because it is across the board. If the reason is that the US says, you know, ‘[T]he moment you make one wrong vote I’m going to take all your assistance’, I would not know. But if that was the case you’d see a different pattern, you’d see a constant alignment on those issues. You see the differences in other small countries, other islands, small countries. We have a more nuanced approach, we support when we can but we also take distance in other issues.” (interview UNmission#160, 15-03-12).

<sup>22</sup>Similarly, a diplomat from another donor country explained, “You might be disappointed if some bilateral aid partner opposed you on a certain issue, you might be disappointed; but that’s where it ends. We certainly, nationally, have untied aid” (interview UNmission#105, 19-07-11). Another donor-delegate explained, “... we tried to initiate a lobby, like a demarche, at capital level, where you had EU delegations approaching Ministries of Foreign Affairs in, for example, Mozambique, advocating for the EU position. Though development aid was never mentioned, some were saying, because we were not successful in our lobbying efforts, so some EU delegations floated the idea that we should start threatening with bi-lateral measures, saying that “well, that is very unfortunate, that Tanzania could not support the EU position, and that of course could mean that in the future we might not be able to give as much as we want”. But it would never be something that [country name omitted by authors] could go along with, we would never do that, and I think we would have to go to a very great extent before that was ever thrown on the table. But of course the development aid is used as a leverage, because it means that we have good relations with places like Tanzania or Ghana, places where [country name omitted by author] has been involved for the past 60 years and where a large part of our development aid is still going, so that of course means that in negotiations, we can approach those countries, because we actually have a very good partnership and try to convince them, or to a certain extent try to promote some our issues within their own group. So instead of a stick, it is more a good way to have good relations with delegations, that you then can capitalize on in certain negotiations.” (interview UNmission#5, 05-10-10).

<sup>23</sup>“The Chinese usually give development aid to so-called prestige projects, so they will finance a building of parliament or a presidential palace that the government really likes, that looks nice. So in that sense, certainly they have increasing sympathy of African countries because they are big players” (UNmission#159, 15-03-12). A member of a recipient country stated, “We have a very long bilateral tie with China of many years and in the past China offered to help us and if you look at, you say, one hand washes the hand of the other one. So yes, they’ve helped us, even if we’re not voting for or there is no upcoming resolution, China is always helping many African countries and we are no exception. They’ve helped us a lot in terms of building schools, hospitals, roads, they’ve helped us. And of course they are our friends, so when there is a need to support them, when we can support them, we support them” (interview UNmission#161, 16-03-12). A diplomat from a donor country explained, “You cannot buy a country into adopting your position just because you offer it some development aid. You have to convince them with your argument that it is in their best interest to be partners with you on that particular issue. So this is where we are laying the emphasis. You know, partnerships, it’s not about, as I said, buying a country to aligning itself.” (interview UNmission#156, 21-02-12). Another diplomat reported, “[T]he issues are not approached as a donor-recipient relation, it’s approached under the framework of South cooperation,



the basis of specific reciprocity, the causal mechanism underlying diffuse reciprocity vote shifts is not based on a resolution-specific tit-for-tat logic. Richer states tend to develop foreign policy positions on a greater number of UNGA agenda items than poorer states (author 2013). In contrast, poorer states face shortages in staff and administrative capacity in both the ministries at home and the missions at the negotiation table and cannot cover all items but rather must prioritize among them (author 2013). Shifting votes towards the donor is the best strategy for recipients if they do not have highly sincere preferences themselves, while they learn over time about consistent donor preferences. Through such incremental vote shifts towards donor positions, recipients signal support and loyalty, which may sustain or attract ODA levels in the longer run. Thus, diffuse reciprocity leads to a gradual alignment of the recipient's and donor's votes, especially for the range of resolutions in which recipient states have no strong positions of their own (interviews UNmission#3, 08-09-10, UNmission#7, 22-10-10, UNmission#145, 02-12-11, UNmission#164, 19-03-12).<sup>24</sup> Considerations of diffuse reciprocity are not only confined to capitals, but are also present at the level of the diplomats themselves. For example, a member from an aid-recipient state explained, "We're not politicians, we are diplomats and we represent our countries. Of course, different countries have different interests. For example, (...) I might have a good donor country bi-laterally, and they really help me out and the country is in the EU and it is having some problems with the G77 supporting a resolution ... So I, as a G77 country, will push this as my national position to get closer to the EU country's position. This would lead it to be closer in line to influence the results, without them coming to me" (interview UNmission#69, 22-03-11).

Qualitative insights lend strong support to the notion of strategic loyalty (diffuse reciprocity), while interviewees only hint towards the possibility that tit-for-tat vote-buying has happened to third countries (specific reciprocity). There may be two reasons why there is a much stronger indication for diffuse than for specific reciprocity. First, the causal mechanism underlying vote buying expects that governments in donor

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so the relation is not, 'I have the money, you're the receiver'; it's more, 'I have this experience I can share with you and in return you can also share back other experiences', so it's a different kind of relation and I don't remember seeing ever China playing the role of, you know, '[L]ittle countries I'm doing all this for you so now you have to, this is my position and this is what the group is going to defend' "(interview UNmission#160, 15-03-12).

<sup>24</sup>Especially, if such voting does not contradict the recipients' own positions. "Well, sometimes of course we choose abstention on certain issues, for instance when it comes to conflict within our friends in Pakistan, you have to abstain up there, then there, the first committee you have a draft resolution from Japan, your friends, but you know the thought is good enough but not ideally what we expect in NAM so we can't vote against but we are not satisfied either with the whole content of the resolution. Perhaps in this case we go for abstention" (interview UNmission#32, 16-12-10). "Everyone here, they reach out to ask for support (...). You're asking what would influence our decision to support? It depends on the issue. If for instance you want to take a very strong stance (...), but we don't have a strong national position then we support." (interview UNmission#162, 16-03-12). Similarly, "We have a more nuanced approach, we support when we can but we also take distance in other issues." (interview UNmission#160, 15-03-12). Also "[country name omitted by the authors] follows the big countries in the EU (FR, GER, NL, UK) unless it's an issue that [country name omitted by the authors] has a strong personal stake in." (interview UNmission#167, 22-11-13).

countries make close links between aid and support for a particular issue in the UNGA. This requires close cooperation between different departments and different units (foreign affairs, economy) and a continuous channel of communication to the diplomat on the ground. On the recipient side, the vote-buying approach implicitly assumes that diplomats can influence their country's position on a specific resolution either by adjusting it themselves or by requesting and obtaining new instructions from the ministry of foreign affairs (MFA) back home, which is responsive to developmental aid threats or offers. However, aid issues are often handled by the economic or development ministry and not the MFA. Thus, vote buying is demanding and would involve a high level of transaction costs on both sides. Accordingly, it is not surprising that there is little empirical support for the underlying causal mechanism of vote-buying (specific reciprocity), "It requires pretty good coordination internally, and most of the times those who are responsible for the development aid are not the ones who are responsible for negotiating at the UN" (UNmission#158, 06-03-12, similar UNmission#71, 22-03-11).<sup>25</sup>

Second, vote-buying produces considerable transaction costs due to the required coordination between different parts of government and diplomats on both the donor and recipient sides. As such, it may be difficult to target more than one country on one specific issue at any given time. Instead, it may be more practical for large states to use their membership in regional or other UN groupings<sup>26</sup> as a platform to persuade other group members on the basis of factual or legal arguments and thereby garner broad support for their positions in the UNGA (e.g. interview UNmission#160, 15-03-12, authors 2016). Not least because of its large number of member states, UNGA negotiations are strongly influenced by group dynamics (author forthcoming). Consequently, working through groups or alliances is a promising and widespread negotiation tactic,<sup>27</sup> while vote-buying via aid payments is attractive mainly in situations in which a donor is otherwise isolated or risks not achieving the required threshold or the aspired share of votes to pass a resolution (interview UNmission#71, 22-03-11, UNmission#104, 14-07-11).<sup>28</sup> Since the EU is a natural alliance, it

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<sup>25</sup>In addition, diplomats from poorer, aid-recipient states do not obtain instructions on all UNGA issues from their capitals due to domestic capacity limitations (interviews UNmission#59, 11-03-11, UNmission#67, 17-03-11, UNmission#48, 09-03-11, c.f. author 2013). This interrupts the recipient side of the causal mechanism. Without instructions, diplomats either have tied hands and cannot adjust or make up a national position by themselves (interviews UNmission#57, 11-03-11, UNmission#36, 07-03-11); or they could do so (interviews UNmission#65, 14-03-11, UNmission#2, 03-06-10) but their personal incentives to respond to vote-buying or aid reduction threats may be limited. As a consequence, it is not surprising that some diplomats report that they have not been offered more developmental aid in exchange for supporting a donor in UNGA negotiations, but have been offered scholarships in exchange for voting support (which, however, do not always materialize afterwards) (interviews UNmission#161, 16-03-12, UNmission#166, 20-03-12).

<sup>26</sup>Most notably, China's affiliation with the G77; Japan and the APT and EAS; Germany, the UK or France and the EU or WEUOG; and the US and the OAS.

<sup>27</sup>Interviews UNmission#60, 11-03-11, UNmission#145, 02-12-11, UNmission#99, 12-05-11, UNmission#101, 24-06-11

<sup>28</sup>The analysis of the voting patterns and interviews indicate that the US is more often isolated than other major donors, such as

has less need to use aid payments to explicitly buy voting support on a specific reciprocity basis than the US, which is not a member of an active grouping in the UNGA (author 2013).

## **Conclusions**

Do powerful states dominate international organizations by systematically buying voting support with developmental aid? This paper presented a model distinguishing between specific and diffuse reciprocity relationships between donors and recipients. Vote buying is characterized by a tit-for-tat exchange, in which the recipients are requested to move towards the donor and will be rewarded by future increases in development aid, or in which shifts away from the donor will be sanctioned through aid reductions. Diffuse reciprocity, by contrast, is based on a looser link between voting alignment and development aid. If a recipient has no strong voting preferences on an issue, its best strategy is to bring its votes on UNGA resolutions into alignment with donor positions. This signaling of loyalty towards a donor is rational, even in instances in which a donor has not requested voting support, as strategically signaling loyalty towards a donor can help to sustain future levels of development aid.

The empirical examination of these logics suggests that voting behavior as a result of diffuse reciprocity is more likely than specific reciprocity exchanges. Yet, even with respect to diffuse reciprocity, the quantitative evidence suggests the finding is restricted to recipient behavior towards only one donor, the US. This is reconcilable both with existing literature, but also with a logic that the US has more to gain from bringing states closer to its position in the UNGA. The US is not a member of any significant, active regional group in the UNGA (authors) and often stands alone, or with few others, on UNGA resolution. With no “ready-made” support for their respective UNGA positions, the US has a far greater incentive to “buy” the support of other member states. Even if explicit vote-buying is rare (or absent), a mere perception of the US as willing to condition ODA on UNGA voting would be sufficient to induce diffuse reciprocity.

Qualitative interviews also provide support for a diffuse relationship between ODA and vote shifts. Interviewees reveal that bigger states tend to develop foreign policy positions on a greater number of items on the UNGA agenda than poorer states who have to prioritize. For resolutions for which a recipient state has no sincere preferences, the best strategy is to shift ones vote towards the donor in order to show goodwill

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Japan, China, or EU members—especially when it comes to issues related to Israel and Palestine (e.g., interviews UNmission#2, 03-06-10, UNmission#159, 15-03-12). Thus, it is not too surprising that the US tends to be more often suspected of engaging in vote-buying than other donors.

and possibly sustain future ODA payments. While the qualitative interviews point towards the possibility of that tit-for-tat vote buying, they also illustrate that vote shifts based on specific reciprocity are empirically limited due to the complexity of the underlying causal mechanism. The people who are responsible for developmental aid are usually not the ones responsible for UNGA negotiations. This renders increasing developmental aid to buy votes for a specific resolution, or decreasing aid as a punishment for refused voting support, cumbersome.

Was Thucydides correct in exclaiming that big states can do what they want, while small states suffer what they must? This paper illustrates that powerful states benefit from their development aid spending as they obtain extra leverage in the UNGA. However, this does not imply that international institutions cannot mediate power differences between states at all (author 2013). Vote shifts based on recipient-initiated, diffuse reciprocity appear more widespread than tit-for-tat vote-buying. The agency of recipient states appears more instrumental in explaining their voting patterns than the donors' power of the purse. Where donors like the US do have influence, it appears more in a latent, reputational form rather than a naked display of coercion.

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## Appendix I



## A Full pooling with past aid

Suppose that the strategy profile in which both recipient types send message  $V_{Rt} = V_{Dt}$  with probability 1 is a fully pooling equilibrium of the vote-for-aid signaling game. Can such behavior be sustained in equilibrium?

In this situation, after observing  $V_{Rt} = V_{Dt}$ , the donor cannot update her beliefs about which type of recipient she is confronted with since both types always vote in alignment. The donor believes that she faces recipient type  $V_R = V_D$  with probability  $Pr(V_R = V_D | V_{Rt} = V_{Dt}) = p$ . By contrast, she believes to be confronted with recipient type  $V_R \neq V_D$  with probability  $Pr(V_R \neq V_D | V_{Rt} \neq V_{Dt}) = 1 - p$ . Observing  $V_{Rt} = V_{Dt}$ , the donor has to decide whether to respond with  $A_{Rt+1}$  or  $\neg A_{Rt+1}$ . Responding with  $A_{Rt+1}$  provides the donor with an expected utility of:

$$EU_D(A_{Rt+1} | V_{Rt} = V_{Dt}) = p(\theta - A_{Rt+1}) + (1 - p)(\theta - A_{Rt+1} + \pi) = \theta - A_{Rt+1} + \pi - p\pi.$$

Responding with  $\neg A_{Rt+1}$  provides expected payoff:

$$EU_D(\neg A_{Rt+1} | V_{Rt}) = p\theta + (1 - p)\theta = \theta.$$

The donor prefers  $\neg A_{Rt+1}$  over  $A_{Rt+1}$  if the following inequality holds:

$$\theta \geq \theta - A_{Rt+1} + \pi - p\pi.$$

Given that  $0 \leq p \leq 1$ ,  $0 \leq \theta \leq 1$ ,  $0 < \pi \leq 1$ , and  $0 < A_{Rt+1}$  by assumption, this is the case if  $p = 0$  and  $0 < \pi \leq A_{Rt+1}$  (case 1) or  $0 < p < 1$ ,  $0 < A_{Rt+1} < 1 - p$ , and  $0 < \pi \leq -\frac{A_{Rt+1}}{(-1+p)}$  (case 2) or  $0 < p < 1$  and  $1 - p \leq A_{Rt+1} \leq 1$  (case 3) or  $p = 1$ . By contrast, the donor prefers  $A_{Rt+1}$  over  $\neg A_{Rt+1}$  if:

$$\theta \leq \theta + \pi - A_{Rt+1} - p\pi.$$

Given the assumptions we make about the parameters in our model, this is given if  $0 \leq p < 1$ ,  $0 < A_{Rt+1} < 1 - p$ , and  $-\frac{A_{Rt+1}}{(-1+p)} \leq \pi \leq 1$  (case 5) or  $A_{Rt+1} = 1 - p$  and  $\pi = 1$  (case 6).

What is the donor's best response to message  $V_{Rt} \neq V_{Dt}$ ? Observing  $V_{Rt} \neq V_{Dt}$ , Bayes' rule is undefined for both types of recipients. We therefore can arbitrarily specify the probabilities of donor re-

sponses off the equilibrium path. Let  $k$  be the probability  $Pr(V_R = V_D | V_{Rt} \neq V_{Dt})$  and  $1 - k$  the probability  $Pr(V_R \neq V_D | V_{Rt} \neq V_{Dt})$ . We then have

$$EU_D(A_{Rt+1} | V_{Rt} \neq V_{Dt}) = k(-A_{Rt+1}) + (1 - k)(-A_{Rt+1}) = -A_{Rt+1}$$

and

$$EU_D(\neg A_{Rt+1} | V_{Rt} \neq V_{Dt}) = k0 + (1 - k)0 = 0.$$

With  $0 < A_{Rt+1} \leq 1$ , we have  $-A_{Rt+1} < 0$  all the time. Thus, observing  $V_{Rt} \neq V_{Dt}$ , the donor's best response is always  $\neg A_{Rt+1}$ .

Is the equilibrium strategy  $V_{Rt} = V_{Dt}$  a best response for both recipient types? In equilibrium, recipient  $V_R = V_D$  sends message  $V_{Rt} = V_{Dt}$  with probability 1. The donor responds with  $\neg A_{Rt+1}$  in the cases 1-4 described above. This yields a payoff of  $\lambda - A_{Rt-1}$ . In cases 5-6, the donor chooses  $A_{Rt+1}$  which results in a payoff for the recipient of  $\lambda + A_{Rt+1}$ . Deviating from the equilibrium message by sending  $V_{Rt} \neq V_{Dt}$  yields a donor response of  $\neg A_{Rt+1}$  and a payoff of  $-A_{Rt-1} - \omega$ .

If the donor responds with  $\neg A_{Rt+1}$  to message  $V_{Rt} = V_{Dt}$  (cases 1-4), the recipient  $V_R = V_D$  never has an incentive to deviate from her equilibrium strategy since

$$\lambda - A_{Rt-1} \geq -A_{Rt-1} - \omega$$

is always true and

$$\lambda - A_{Rt-1} \leq -A_{Rt-1} - \omega$$

is never true given  $0 \leq \lambda \leq 1$ ,  $0 < \omega \leq 1$ , and  $0 < A_{Rt-1} \leq 1$ .

If the donor takes action  $A_{Rt+1}$  in response to message  $V_{Rt} = V_{Dt}$  (cases 5-6), the recipient has no incentive to deviate from her equilibrium strategy if  $0 < A_{Rt-1} < 1$  and  $A_{Rt-1} \leq A_{Rt+1} \leq 1$  or  $A_{Rt-1} = 1$  and  $A_{Rt+1} = 1$  in situations of  $A_{Rt+1} \geq A_{Rt-1}$ . Further, if  $0 < A_{Rt+1} \leq A_{Rt-1}$  in situations in which  $A_{Rt+1} \leq A_{Rt-1}$ , the recipient of type  $V_R = V_D$  also has no incentive to deviate from her equilibrium strategy. Neither with  $A_{Rt+1} \geq A_{Rt-1}$ , nor with  $A_{Rt+1} \leq A_{Rt-1}$ , does the recipient have an incentive to deviate from her equilibrium strategy.

The recipient  $V_R \neq V_D$  chooses message  $V_{Rt} = V_{Dt}$  with probability 1 in equilibrium. In cases 1-4, the donor responds with  $\neg A_{Rt+1}$ , which gives the recipient a payoff of  $-A_{Rt-1}$ . In cases 5-6, the donor responds with  $A_{Rt+1}$  and the recipient receives payoff  $A_{Rt+1}$ . Deviating with  $V_{Rt} \neq V_{Dt}$  yields donor response  $\neg A_{Rt+1}$  and payoff  $\lambda - A_{Rt-1} - \omega$ .

If the donor responds with  $\neg A_{Rt+1}$  to message  $V_{Rt} = V_{Dt}$  (cases 1-4), the recipient  $V_R \neq V_D$  has no incentive to deviate from her equilibrium strategy if  $0 \leq \lambda \leq \omega$  given that  $0 \leq \lambda \leq 1$ ,  $0 < A_{Rt-1} \leq 1$ ,  $0 < A_{Rt+1} \leq 1$ , and  $0 < \omega \leq 1$  by assumption. The recipient has an incentive to deviate in cases 1-4 if  $0 < \omega < 1$  and  $\omega \leq \lambda \leq 1$  or  $\omega = 1$  and  $\lambda = 1$ .

In cases 5-6, i.e. when the donor responds with  $A_{Rt+1}$  after observing the message  $V_{Rt} = V_{Dt}$ , we can distinguish between two situations, one in which  $A_{Rt+1} \geq A_{Rt-1}$  and one in which we have  $A_{Rt+1} \leq A_{Rt-1}$ . With  $A_{Rt+1} \geq A_{Rt-1}$ , the recipient has no incentive to deviate under a range of conditions specified in the first row of the first column of table A-1. By contrast, the recipient has an incentive to deviate from her equilibrium strategy if the conditions in the second row of the first column in table A-1 hold. Similarly, there are numerous conditions under which the recipient has no incentive to deviate when  $A_{Rt+1} \leq A_{Rt-1}$ . These conditions are listed in the first row of the second column in table A-1. There are also situations in which the recipient has an incentive to deviate, which are summarized in the second row of the second column in table A-1.

Thus, there are numerous conditions under which the strategy profile in which both recipient types send message  $V_{Rt} = V_{Dt}$  with probability 1, is a perfect Bayesian equilibrium.

Table A-1. Incentive compatibility conditions for recipient type  $V_R \neq V_D$  in cases 5-6 of the fully pooling equilibrium in which both recipient types send message  $V_{Rt} = V_{Dt}$  with probability 1

	$A_{Rt+1} \geq A_{Rt-1}$	$A_{Rt+1} \leq A_{Rt-1}$
$A_{Rt+1} \geq \lambda - A_{Rt-1} - \omega$	$0 < A_{Rt-1} < \frac{1}{2}, A_{Rt+1} = A_{Rt-1}, 0 < \omega \leq 1 - A_{Rt+1} - A_{Rt-1}, 0 \leq \lambda \leq A_{Rt+1} + A_{Rt-1} + \omega$ $0 < A_{Rt-1} < \frac{1}{2}, A_{Rt+1} = A_{Rt-1}, 1 - A_{Rt+1} - A_{Rt-1} < \omega \leq 1$ $0 < A_{Rt-1} < \frac{1}{2}, A_{Rt-1} < A_{Rt+1} < 1 - A_{Rt-1}, 0 < \omega < 1 - A_{Rt+1} - A_{Rt-1},$ $0 \leq \lambda \leq A_{Rt+1} + A_{Rt-1} + \omega$ $\frac{1}{2} < A_{Rt-1} < 1, 0 < A_{Rt+1} < 1 - A_{Rt-1}, 0 < \omega < 1 - A_{Rt+1} - A_{Rt-1}, 0 \leq \lambda \leq A_{Rt+1} + A_{Rt-1} + \omega$ $\frac{1}{2} < A_{Rt-1} < 1, 0 < A_{Rt+1} < 1 - A_{Rt-1}, 1 - A_{Rt+1} - A_{Rt-1} \leq \omega \leq 1$ $\frac{1}{2} < A_{Rt-1} < 1, 1 - A_{Rt-1} \leq A_{Rt+1} \leq A_{Rt-1}$ $A_{Rt-1} = 1$	$0 < A_{Rt-1} < \frac{1}{2}, 0 < A_{Rt+1} < A_{Rt-1}, 0 < \omega \leq 1 - A_{Rt+1} - A_{Rt-1}, 0 \leq \lambda \leq A_{Rt+1} + A_{Rt-1} + \omega$ $0 < A_{Rt-1} < \frac{1}{2}, 0 < A_{Rt+1} < A_{Rt-1}, 1 - A_{Rt+1} - A_{Rt-1} < \omega \leq 1$ $0 < A_{Rt-1} < \frac{1}{2}, A_{Rt+1} = A_{Rt-1}, 0 < \omega < 1 - A_{Rt+1} - A_{Rt-1}, 0 \leq \lambda \leq A_{Rt+1} + A_{Rt-1} + \omega$ $A_{Rt-1} = \frac{1}{2}, 0 < A_{Rt+1} < \frac{1}{2}, 0 < \omega < \frac{1}{2} - A_{Rt+1}, 0 \leq \lambda \leq \frac{1}{2} + A_{Rt+1} + \omega$ $A_{Rt-1} = \frac{1}{2}, 0 < A_{Rt+1} < \frac{1}{2}, \frac{1}{2} - A_{Rt+1} \leq \omega \leq 1$ $A_{Rt-1} = \frac{1}{2}, A_{Rt+1} = \frac{1}{2}$ $0 < A_{Rt-1} < \frac{1}{2}, A_{Rt-1} < A_{Rt+1} < 1 - A_{Rt-1}, 1 - A_{Rt+1} - A_{Rt-1} \leq \omega \leq 1$ $0 < A_{Rt-1} < \frac{1}{2}, 1 - A_{Rt-1} \leq A_{Rt+1} \leq 1$ $\frac{1}{2} \leq A_{Rt-1} < 1, A_{Rt-1} \leq A_{Rt+1} \leq 1$ $A_{Rt-1} = 1, A_{Rt+1} = 1$
$A_{Rt+1} \leq \lambda - A_{Rt-1} - \omega$	$0 < A_{Rt-1} < \frac{1}{2}, 0 < A_{Rt+1} \leq A_{Rt-1}, 0 < \omega < 1 - A_{Rt+1} - A_{Rt-1}, A_{Rt+1} + A_{Rt-1} + \omega \leq \lambda \leq 1$ $0 < A_{Rt-1} < \frac{1}{2}, 0 < A_{Rt+1} \leq A_{Rt-1}, \omega = 1 - A_{Rt+1} - A_{Rt-1}, \lambda = 1$	$0 < A_{Rt-1} < \frac{1}{2}, A_{Rt-1} \leq A_{Rt+1} < 1 - A_{Rt-1}, 0 < \omega < 1 - A_{Rt+1} - A_{Rt-1}, A_{Rt+1} + A_{Rt-1} + \omega \leq \lambda \leq 1$ $0 < A_{Rt-1} < \frac{1}{2}, A_{Rt-1} \leq A_{Rt+1} < 1 - A_{Rt-1}, \omega = 1 - A_{Rt+1} - A_{Rt-1}, \lambda = 1$ $\frac{1}{2} \leq A_{Rt-1} < 1, 0 < A_{Rt+1} < 1 - A_{Rt-1}, 0 < \omega < 1 - A_{Rt+1} - A_{Rt-1}, A_{Rt+1} + A_{Rt-1} + \omega \leq \lambda \leq 1$ $\frac{1}{2} \leq A_{Rt-1} < 1, 0 < A_{Rt+1} < 1 - A_{Rt-1}, \omega = 1 - A_{Rt+1} - A_{Rt-1}, \lambda = 1$

## B Partial separation with past aid

Suppose that the strategy profile in which the recipient type  $V_R = V_D$  sends the message  $V_{Rt} = V_{Dt}$  with probability 1, while the recipient type  $V_R \neq V_D$  sends message  $V_{Rt} = V_{Dt}$  with probability  $q$  and message  $V_{Rt} \neq V_{Dt}$  with probability  $1 - q$  is a partially separating equilibrium. Can such behavior be sustained in equilibrium?

Observing  $V_{Rt} \neq V_{Dt}$ , the donor knows based on Bayes' rule that  $Pr(V_R = V_D | V_{Rt} \neq V_{Dt}) = 0$ . Thus, observing  $V_{Rt} \neq V_{Dt}$ , the donor's best response is action  $\neg A_{Rt+1}$  because it yields a payoff of  $0 > -A_{Rt+1}$ , given that  $0 < A_{Rt+1} \leq 1$ . Observing message  $V_{Rt} = V_{Dt}$ , Bayes' rule implies for the donor's beliefs to be confronted with recipient  $V_R = V_D$ :

$$\begin{aligned} Pr(V_R = V_D | V_{Rt} = V_{Dt}) &= \frac{Pr(V_{Rt} = V_{Dt} | V_R = V_D) Pr(V_R = V_D)}{Pr(V_{Rt} = V_{Dt} | V_R = V_D) Pr(V_R = V_D) + Pr(V_{Rt} = V_{Dt} | V_R \neq V_D) Pr(V_R \neq V_D)} \\ &= \frac{p}{p + q(1 - p)}. \end{aligned}$$

For recipient  $V_R \neq V_D$ , it implies:

$$\begin{aligned} Pr(V_R \neq V_D | V_{Rt} = V_{Dt}) &= \frac{Pr(V_{Rt} = V_{Dt} | V_R \neq V_D) Pr(V_R \neq V_D)}{Pr(V_{Rt} = V_{Dt} | V_R \neq V_D) Pr(V_R \neq V_D) + Pr(V_{Rt} = V_{Dt} | V_R = V_D) Pr(V_R = V_D)} \\ &= \frac{q(1 - p)}{p + q(1 - p)}. \end{aligned}$$

In this equilibrium, the donor mixes strategies after observing  $V_{Rt} = V_{Dt}$ . Thus, she must be indifferent between  $\neg A_{Rt+1}$  and  $A_{Rt+1}$  following  $V_{Rt} = V_{Dt}$ . In other words, we require that  $EU_D(A | V_{Rt} = V_{Dt}) = EU_D(\neg A_{Rt+1} | V_{Rt} = V_{Dt})$ . Substituting and re-arranging, we find that this is given if:

$$\frac{\pi q(1 - p)}{p + q(1 - p)} = A_{Rt+1}.$$

Solving for  $q$ , we have:

$$q = \frac{A_{Rt+1} p}{(A_{Rt+1} - \pi)(-1 + p)}.$$

Since  $q$  is a probability, it is required to be within the unit interval. Given our assumption about the parameters in our model, this is given under two conditions: 1)  $0 < A_{Rt+1} < \pi$ ; and 2)  $0 \leq p \leq \frac{-A_{Rt+1} + \pi}{\pi}$  and  $\pi < A_{Rt+1} \leq 1$  and  $p = 0$ . These are two necessary conditions for the partially separating equilibrium to hold.

In addition to the donor, the recipient  $V_R \neq V_D$  must also be indifferent between her two alternative strategies. If the recipient  $V_R \neq V_D$  chooses message  $V_{Rt} \neq V_{Dt}$ , the response of the donor is  $\neg A_{Rt+1}$  and she receives a payoff of  $\lambda - A_{Rt-1} - \omega$ . With  $r$  being the probability that the donor responds with the promise of an aid payment after observing an in-alignment voting, the recipient receives an expected payoff from choosing message  $V_{Rt} = V_{Dt}$  of  $EU_{V_R \neq V_D}(V_{Rt} = V_{Dt}) = rA_{Rt+1} + A_{Rt-1}(1 - r)$ . Solving for  $r$ , we obtain the indifference condition for the recipient:

$$r = \frac{\lambda - \omega}{A_{Rt+1} + A_{Rt-1}}.$$

Since  $r$  is a probability, we require that  $0 \leq r \leq 1$ . Given our assumptions about model parameters, this is given under a large number of conditions for both situations in which  $A_{Rt+1} \geq A_{Rt-1}$  as well as  $A_{Rt+1} \leq A_{Rt-1}$ . We summarize these conditions in table A-2. These are additional necessary conditions of this equilibrium.

Table A-2. Conditions for  $0 \leq r \leq 1$  in partially separating equilibrium in which the recipient type  $V_R = V_D$  sends the message  $V_{Rt} = V_{Dt}$  with probability 1, while the recipient type  $V_R \neq V_D$  sends message  $V_{Rt} = V_{Dt}$  with probability  $q$  and message  $V_{Rt} \neq V_{Dt}$  with probability  $1 - q$

$A_{Rt+1} \geq A_{Rt-1}$	$A_{Rt+1} \leq A_{Rt-1}$
$\lambda = \omega, 0 < A_{Rt-1} < 1, A_{Rt-1} \leq A_{Rt+1} \leq 1$	$0 < \omega < 1, \lambda = \omega$
$\lambda = \omega, A_{Rt-1} = 1, A_{Rt+1} = 1$	$0 < \omega < 1, \omega < \lambda < 1, A_{Rt-1} = \frac{\lambda - \omega}{2}, A_{Rt+1} = A_{Rt-1}$
$\omega < \lambda \leq 1, 0 < A_{Rt-1} \leq \frac{\lambda - \omega}{2}, -A_{Rt-1} + \lambda - \omega \leq A_{Rt+1} \leq 1$	$0 < \omega < 1, \omega < \lambda < 1, \frac{\lambda - \omega}{2} < A_{Rt-1} < \lambda - \omega, -A_{Rt-1} + \lambda - \omega \leq A_{Rt+1} \leq A_{Rt-1}$
$\omega < \lambda \leq 1, \frac{\lambda - \omega}{2} < A_{Rt-1} < 1, A_{Rt-1} \leq A_{Rt+1} \leq 1$	$0 < \omega < 1, \omega < \lambda < 1, \lambda - \omega \leq A_{Rt-1} \leq 1, 0 < A_{Rt+1} \leq A_{Rt-1}$
$A_{Rt-1} = 1, A_{Rt+1} = 1$	$0 < \omega < 1, \lambda = 1, A_{Rt-1} = \frac{1 - \omega}{2}, A_{Rt+1} = 1 - A_{Rt-1} - \omega$
	$0 < \omega < 1, \lambda = 1, \frac{1 - \omega}{2} < A_{Rt-1} < 1 - \omega, 1 - A_{Rt-1} - \omega \leq A_{Rt+1} \leq A_{Rt-1}$
	$0 < \omega < 1, \lambda = 1, 1 - \omega \leq A_{Rt-1} \leq 1, 0 \leq A_{Rt+1} \leq A_{Rt-1}$
	$\omega = 1, \lambda = 1$

Finally, we need to examine whether the proposed equilibrium strategies are incentive compatible for recipient  $V_R = V_D$ , who is not mixing strategies in equilibrium. The recipient  $V_R = V_D$  sends message  $V_{Rt} = V_{Dt}$  with certainty in equilibrium and receives expected utility

$$EU_{V_R}(V_{Rt} = V_{Dt}) = r(\lambda A_{Rt+1}) + (1 - r)(\lambda - A_{Rt-1}) = \lambda + A_{Rt-1}(-1 + r) + rA_{Rt+1}.$$

Substituting for  $r$ , we obtain:

$$EU_{V_R}(V_{Rt} = V_{Dt}) = -A_{Rt-1} + 2\lambda - \omega.$$

If the recipient deviates and chooses message  $V_{Rt} \neq V_{Dt}$ , the donor responds with  $-A_{Rt+1}$  which yields a recipient payoff of  $-A_{Rt-1} - \omega$ . Given  $0 \leq \lambda \leq 1$ ,  $0 < A_{Rt+1} \leq 1$ , and  $0 < \omega \leq 1$ , we see that

$$-A_{Rt-1} + 2\lambda - \omega \geq -A_{Rt-1} - \omega$$

is always true. Thus, the recipient  $V_R = V_D$  never has an incentive to deviate from her equilibrium strategy.

By contrast,

$$-A_{Rt-1} + 2\lambda - \omega \leq -A_{Rt-1} - \omega$$

is only true if  $\lambda = 0$ , i.e. when the recipient has no sincere preferences. Thus, only when she has no sincere preferences regarding the UNGA resolution under consideration, the recipient whose preferences are in line with the preferences of the donor has an incentive to not vote in line with the donor in equilibrium.

In sum, there are a broad range of conditions under which the strategy profile in which the recipient type  $V_R = V_D$  sends the message  $V_{Rt} = V_{Dt}$  with probability 1, while the recipient type  $V_R \neq V_D$  sends message  $V_{Rt} = V_{Dt}$  with probability  $q$  and message  $V_{Rt} \neq V_{Dt}$  with probability  $1 - q$  is a perfect Bayesian equilibrium in our vote-for-aid signaling model.

### C Full separation with past aid

Suppose that the strategy profile in which the recipient of type  $V_R = V_D$  chooses message  $V_{Rt} = V_{Dt}$  with certainty and the recipient of type  $V_R \neq V_D$  chooses message  $V_{Rt} \neq V_{Dt}$  with certainty is a fully separating equilibrium of the vote-for-aid signaling game. Can such behavior be sustained in equilibrium?

Observing message  $V_{Rt} = V_{Dt}$ , Bayes' rule implies for the donor's beliefs about being confronted with recipient  $V_R = V_D$   $Pr(V_R = V_D | V_{Rt} = V_{Dt}) = 1$ . Conversely, for the donor's beliefs about dealing with recipient  $V_R \neq V_D$ , we have  $Pr(V_R \neq V_D | V_{Rt} = V_{Dt}) = 0$ .<sup>29</sup> After observing message  $V_{Rt} = V_{Dt}$ , the donor chooses action  $\neg A_{Rt+1}$  because with  $0 < A_{Rt+1} \leq 1$  and  $0 \leq \theta \leq 1$  we have  $\theta > \theta - A_{Rt+1}$ .

After observing  $V_{Rt} \neq V_{Dt}$ , the donor knows that she deals with recipient type  $V_R \neq V_D$  with certainty. Based on this belief, the donor responds to  $V_{Rt} \neq V_{Dt}$  with  $\neg A_{Rt+1}$  since  $0 > -A_{Rt+1}$  given that  $0 < A_{Rt+1} \leq 1$ .

What are the recipients' best responses? In equilibrium, recipient  $V_R = V_D$  sends message  $V_{Rt} = V_{Dt}$  with probability 1. The donor responds with  $\neg A_{Rt+1}$  and the recipient receives payoff  $\lambda - A_{Rt-1}$ . Deviating with message  $V_{Rt} \neq V_{Dt}$  leads to donor response  $\neg A_{Rt+1}$  and recipient payoff  $-A_{Rt-1} - \omega$ . Given  $0 \leq \lambda \leq 1$ ,  $0 < A_{Rt-1} \leq 1$ , and  $0 < \omega \leq 1$ ,

$$\lambda - A_{Rt-1} \geq -A_{Rt-1} - \omega$$

is always true and

$$\lambda - A_{Rt-1} \leq -A_{Rt-1} - \omega$$

is never true. Thus, its equilibrium strategy of recipient  $V_R = V_D$  is always its best response.

What is the best response of recipient  $V_R \neq V_D$ ? In equilibrium, the recipient  $V_R \neq V_D$  sends message  $V_{Rt} \neq V_{Dt}$  with certainty. The donor always responds with  $\neg A_{Rt+1}$ , which leads to a recipient payoff of  $\lambda - A_{Rt-1} - \omega$ . Deviating with  $V_R = V_D$  leads to donor response  $\neg A_{Rt+1}$  and recipient payoff  $-A_{Rt-1}$ . Given our assumptions about the parameters in our model,

$$\lambda - A_{Rt-1} - \omega \geq -A_{Rt-1}$$

if  $0 < \omega < 1$  and  $\omega \leq \lambda \leq 1$  or if  $\omega = 1$  and  $\lambda = 1$ . We have

<sup>29</sup>The opposite holds for the donor's beliefs after observing message  $V_{Rt} \neq V_{Dt}$ .



$$\lambda - A_{Rt-1} - \omega \leq -A_{Rt-1}$$

if  $0 \leq \lambda \leq \omega$ . Thus, while recipient  $V_R = V_D$  never has an incentive to deviate from her equilibrium strategy, there are conditions under which recipient  $V_R \neq V_D$  also has no incentive to deviate. To summarize, there are conditions under which the strategy profile in which the recipient of type  $V_R = V_D$  chooses message  $V_{Rt} = V_{Dt}$  with certainty and the recipient of type  $V_R \neq V_D$  chooses message  $V_{Rt} \neq V_{Dt}$  with certainty is a perfect Bayesian equilibrium of our vote-for-aid signaling model.