Endogenous Favoritism in Organizations*

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Abstract

This paper addresses the issues of authority and communication in the management of innovation within an organization. In particular, the paper shows that when the principal can fund only one of two competing research (or investment) ideas, it can be optimal for the principal to listen to only one of two agents (or research divisions) and ignore the other. Such favoritism is optimal especially when the favorite has larger incentive to abuses his authority.

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1 Introduction

Favoritism is one of the most important sources of workplace conflict and stress.[1] It is also a cause and an outcome of politics and power struggles within organizations. In the end, favoritism leads to inefficient decisions and the loss of motivation and productivity[2]. Thus, some argue that perceived favoritism is a cancer within any organization.[3]

Despite widespread favoritism and potentially significant economic consequences, there are only a few economic studies of favoritism in organizations. More importantly, most studies of favoritism, including studies in business and sociology, blame the decision-maker's *personal* preference for a certain agent (or a group of agents) as the source of favoritism[4] (e.g. Prendergast and Topel 1996). Thus, the oft suggested solutions, such as disciplining a manager or limiting the manager's scope of authority, are also personal as they target a specific decision-maker. However, it is not clear whether such a personal preference is strong enough to cause serious inefficiency in profit-maximizing firms. Would an owner of a company promote his/her friend blindly if it causes a significant loss of profit?

This paper argues that the source of favoritism can be *structural*. More specifically, we show that favoritism can rise endogenously as an optimal decision rule in a symmetric model with an ex-ante impartial principal. We consider an organization with a team of two agents, where the principal observes only the team performance. Under favoritism, the principal chooses a favorite

[1] In a survey of Canadian government workers, Comerford (2002) finds that favoritism is the second most important source of workplace conflict followed by workload.

[2] Albright and Carr (1997) lists favoritism as one of the top ten mistakes in dealing with workers.

[3] From "How to Improve your Bottom Line" in the Alpha Review by Burke Group Minnesota, Inc.

[4] Garicano, Palacios and Prendergast (2001) also shows that social pressure can induce favoritism.

and honors his decision only (or delegates the decision right). Then, to insure an efficient decision, the principal needs to provide large monetary incentives to the favorite. However, the ignored employees will lose motivation and may give up searching for good ideas.

Alternatively, the principal could adopt a *fair* decision rule where she honors both agents' decisions. Then, in order to make an efficient decision, the principal has to provide large enough incentives to *both* agents (instead of one). Otherwise, the agents will continue to argue that each has a strictly better idea than the other, and the principal will end up making the decision randomly. However, with the proper incentives, both agents will work hard. That is, it is more difficult to induce an efficient decision under fairness than under favoritism, but both agents are more equally motivated under fairness. So, when the cost of providing proper incentives for an efficient decision is sufficiently large, even an ex-ante impartial principal would exercise favoritism.

Our results imply that workplace conflict may not be caused by favoritism. Instead, the conflict in preference (or task) may give rise to favoritism as an equilibrium outcome. Therefore, enforcing fairness when the problems of favoritism appear to be large can do more harm than good. Note that when the conflicts between agents' preferences are large, the favorite will insist harder on implementing his own idea. Thus, the problems of favoritism will become more severe. However, precisely when the conflicts between agents' preferences are large, fairness performs even worse than favoritism because the agents have larger incentives to insist on implementing their own ideas. Thus, enforcing fairness without reducing underlying conflicts and information asymmetry may undermine the overall efficiency of an organization.

This paper also shows why strong favoritism may appear to be based on small personal preference. When favoritism is optimal, the principal has to choose someone as a favorite. Then, the principal may well choose the favorite based on small personal preference. In this case, though it may appear that favoritism is based on the principal's personal preference, it is the structural problems like task conflicts and information asymmetry that give rise to favoritism endogenously. That is, if the principal is going to lose a significant amount of profit due to these structural problems regardless of who she promotes, and if giving equal chance of promotion to all the candidates reduces the profit even further, she may well promote her friend or whoever she prefers even slightly.

Prendergast and Topel (1996) is one of a few studies that explicitly analyze the effect of favoritism on incentives, but they assume that a supervisor draws utility directly from a worker's payoff, making favoritism ad hoc. Thus, if we replace the supervisor with an impartial one, favoritism would disappear in their model. However, in our model, when favoritism is optimal, if we replace the principal with someone with no personal bias, the new principal may choose a different favorite, but favoritism will continue. Rotemberg and Saloner (1995, 1994, 2000) shows that it may be optimal to favor one department of a firm because it reduces the explicit cost of conflict. However, if there is no explicit cost of conflict (e.g. simple lying), or if a principal can optimally adjust the monetary incentives for the decision-maker (e.g. bonus contract), the favoritism would not arise in their model. In our paper, we endogenize both the cost of conflict and the incentive contracts, and show that favoritism can still be optimal if the principal observes only the team performance. Athey and Roberts (2001) studies the effect of the incentive contract on decision-making. However, they focus on the delegation to one agent, and do not compare it with fairness (or group decision). Baliga and Sjostrom (2001) also studies the optimal mechanism in an organization with one principal and two agents. In their model, the ideas are given exogenously to one of two agents, and the optimal mechanism is to follow the recommendation of the agent with an idea. In our model, the ideas are generated endogenously by both agents, and either favoritism or fairness can be the optimal mechanism.

Our paper also provides new insights on communication and authority structure. Under favoritism, the principal listens to only the favorite's recommendation and ignores the others'. This is equivalent to a hierarchical communication structure where the principal communicates only with a top-manager. A middle-manager reports to the top-manager, but cannot directly communicate with the principal. Thus, our model shows that the hierarchical communication structure can be optimal even when the top-manager can strategically distort information for his advantage (i.e. claim that he has a good idea), while most previous studies of communication structure assume that players always communicate truthfully (e.g. Radner 1993, Garicano 2000, Friebel and Raith 2001[5]).

Favoritism in our model is also equivalent to delegation of decision rights (or authority) to the favorite, because the principal always follows the favorite's recommendation. We can also interpret fairness as a group decision where the decision is made according to the majority rule. Most previous studies of delegation have focused on whether to delegate authority to a particular agent or not. (e.g. Aghion and Tirole 1997) However, few have studied the delegation to a group of agents even though there are many examples where multiple agents share the decision right (e.g. majority rule in a congress).

The rest of the article is organized as follows. In Section 2, we introduce the model and

[5] Friebel and Raith (2001) does study the manager's strategic incentive of hiring, but they assume that the worker always communicates truthfully.

characterize the first-best outcome. Sections 3 and 4 analyze favoritism and fairness as equilibrium outcomes. Then, we compare two equilibria in Section 5. In Section 6, we discuss the implications for communication and authority structure. We conclude in Section 7.

2 The Model

Set-up We consider an organization consisting of one principal and a team of two agents. The task of each agent is to generate a profitable idea (or project). Provided agent i exerts an effort a_i ($i = 1, 2$), the agent can generate a good idea (denoted by G) with probability a_i and a bad idea (denoted by B) with probability $1 - a_i$, where $0 \leq a_i < 1$. If a good idea is implemented, the principal receives revenue y_H. If a bad idea is implemented, the principal receives y_L ($< y_H$).

For simplicity, denote the realized ideas of two agents by

$$S = (s_1, s_2)$$

where $s_i \in \{G, B\}$. Thus, if agent 1 has a bad idea and agent 2 has a good idea, then $S = (B, G)$.

The organization can implement only one idea[6]. The principal only observes the team performance, i.e. the realized revenue (y_H and y_L), and does not observe each agent's effort, idea, or whose idea is implemented. For example, stock owners of a firm may observe the increase in the stock price (or earnings) of the company, but not which manager is responsible for the increase.

The revenues are verifiable, and the contract takes the following form:

$$\mathcal{C} = \{(w_H, w_L), (v_H, v_L)\} \tag{1}$$

[6] The organization may have limited resources. Or the agents are working on competing ideas. Sometimes, an organization deliberately chooses only one to create competition between agents.

where w_j is the wage payment to agent 1 and v_j is the wage payment to agent 2 when the outcome is y_j $(j = H, L)$.[7]

Preferences Each agent prefers implementing his own idea rather than the other's. Formally, if an agent implements his good idea, he enjoys a private (or non-pecuniary) benefit b_H, while if his bad idea is implemented, he enjoys b_L $(0 < b_L \leq b_H)$. For simplicity, we assume that the agent does not enjoy any private benefit if his idea is not implemented. Possible sources of such private benefits include: the gaining of experience from the actual implementation of the idea, the control to implement the idea in the preferred way, the control over the budget for the implementation, and the increase in the probability of a future promotion.[8]

The difference $d_b \equiv b_H - b_L$ represents *private motivation* as well as similarity in the preferences of the principal and the agents. If this private motivation becomes large, the agents will exert more effort even without any monetary incentives. However, large private motivation does not necessarily induce truthful communication because each agent will still prefer to implement his own bad idea and get b_L rather than implement the other's good idea and get zero private benefit. Thus, b_L captures the *desire for power* and represents the difference in the preferences of the two agents. If b_L is large, each agent will promote even his bad idea while denigrating the other's[9].

[7] In the previous version of the paper, we also studied a menu of contracts while imposing limited liability. The qualitative results do not change.

[8] For evidence and further discussion of private benefit (or intrinsic awards), see, for example, Avery et. al. (1998) and Galbraith (1997).

[9] For example, when a management information systems (MIS) group was established to handle one company's data processing needs, the director of this group allocated resources to projects on the basis of financial payoffs.

A marketing administration group found that their own projects for MIS would not be funded because there were better-justified projects from other areas. Thus, the marketing administration manager used his political power to

All the players are risk-neutral. The principal's payoff is $y_j - w_j - v_j$ when the outcome y_j is realized ($j = H, L$). Note that the principal does not enjoy any private benefit from providing favor to an agent. Thus, there is no exogenous favoritism in the model. For simplicity, we assume that an agent's disutility of effort is $\frac{k}{2}a^2$. Normalizing $k = 1$, we can write agent 1's utility as $w_j + b_j - \frac{1}{2}a_1^2$ when his idea is implemented and the outcome is y_j ($j = H, L$). If agent 1's idea is not implemented, he obtains utility $w_j - \frac{1}{2}a_1^2$. Agent 2's utilities are similarly defined.[10] We normalize the agent's reservation utility to zero.

Favoritism and Fairness Because the organization can implement only one idea, and because the agents want to implement their own ideas, there exists a potential conflict of interests between the agents. There are two ways to resolve this conflict. If the principal gives all the decision right (to select an idea) to one of two agents, then we refer to it as *favoritism* and call the agent with the decision right the principal's *favorite*. Instead, if the principal gives equal decision rights to the agents, then we call it *fairness*. Under favoritism, the favorite selects which idea to implement to maximize his own utility. Under fairness, if two agents agree, they implement the agreed-upon idea. However, if two agents disagree, each idea is chosen with equal probability.

Timing of the Game The timing of the game is as follows: There are two stages. In the beginning of the first stage, the principal decides whether to adopt favoritism or fairness. Then,

rally marketing executives together *to show the poor service of the MIS group and to justifiy his projects.* In the end, the marketing manager got his own MIS group within marketing and implemented his projects. (Murray and Gantz 1980 p.14)

[10] We assume that there are no side-payments. For example, one cannot promise to implement the other's idea in return for a side-payment because it is not verifiable whose idea is implemented.

the principal and each agent sign a binding wage contract. In the first stage, each agent i invests an unobservable effort (a_i) in finding a profitable idea or project ($i = 1, 2$).[11] At the end of the first stage, each idea is realized as either good or bad. In the second stage, the idea is chosen, and the outcome is realized. In the end of the second stage, the wage payments are made according to the contract.

First-Best Outcome As the benchmark, we first characterize the first-best outcome that maximizes the total expected surplus, $S(a_1, a_2)$, as follows:

$$\max_{a_1,a_2} \mathcal{S}(a_1, a_2) = (a_1 + a_2 - a_1 a_2)(y_H + b_H) + (1 - a_1)(1 - a_2)(y_L + b_L) - \frac{1}{2}a_1^2 - \frac{1}{2}a_2^2 \quad (2)$$

With probability $a_1 + a_2 - a_1 a_2$, at least one agent comes up with a good idea, and the good idea is implemented. Then, the principal receives y_H, and one agent will receive b_H. With probability $(1 - a_1)(1 - a_2)$, both agents have bad ideas. Thus, the principal receives y_L, and one agent will receive b_L. Subtracting disutility of efforts yields the total expected surplus in (2).

The FOC's are

$$\frac{\partial \mathcal{S}}{\partial a_1} = (1 - a_2)(d_y + d_b) - a_1 = 0 \quad (3)$$

$$\frac{\partial \mathcal{S}}{\partial a_2} = (1 - a_1)(d_y + d_b) - a_2 = 0 \quad (4)$$

where $d_y \equiv y_H - y_L$ and $d_b \equiv b_H - b_L$.

We impose the following assumptions.

Assumption 1 $d_y + d_b < 1$.

[11] We assume that the agents choose their effort level simultaneously. However, even if effort choice is made sequentially, the results do not change.

Assumption 2 $b_H < 1$.

The second order conditions are satisfied under assumption 1. Assumption 2 guarantees that $a_i \leq 1$ in the following sections. From (3) and (4), the first-best effort level is

$$a_1^* = a_2^* = a_{FB}^* \equiv \frac{d_y + d_b}{1 + d_y + d_b} \tag{5}$$

Note that the principal is concerned with two types of efficiency. First, the agent should be induced to exert an optimal level of effort, a_{FB}^*, in the first stage (*ex-ante efficiency).* Second, taking the ideas as given, the organization must implement the best idea in the second stage, which is implicitly built into expression (2) (*ex-post efficiency).*

3 Favoritism

Without loss of generality, assume that the principal has picked agent 1 as the favorite and delegated the full decision right. We solve using backward induction. First, we analyze the favorite's decision making in the second stage, given the realizedi deas. Second, we study the choice of efforts in the first stage. Then, we consider the optimal wage contract.

Decision Making Without the wage contract, agent 1 would always pick his project. However, with the performance-based wage contract, agent 1 may select agent 2's idea if the incentive payment is sufficiently large. That is, suppose that agent 1 has a bad idea and agent 2 has a good idea, that is, $S = (B, G)$. If agent 1 implements his own project, he receives $w_L + b_L$. If agent 1 implements agent 2's idea, agent 1 receives w_H. Thus, if $w_L + b_L \leq w_H$ (or $w_H - w_L \geq b_L$), agent 1 will implement agent 2's good idea.

On the other hand, suppose that agent 1 has a weakly better idea than agent 2. Then, assuming $w_H \geq w_L$, implementing agent 2's idea provides strictly less private benefit and weakly less incentive payment to agent 1. Therefore, regardless of the size of the incentive payment, there is no incentive for agent 1 to implement agent 2's idea. To summarize,

Lemma 1 If $w_H - w_L \geq b_L$ and $S = (B, G)$, the favorite (= agent 1) implements agent 2's idea. In all the other cases, the favorite implements his own idea.

Proof. From discussion above. ■

Note that the incentive contract affects the favorite's decision and the potential conflict. Without the incentive contract, if $S = (B, G)$, the favorite would implement his own idea despite the potential conflict with agent 2. However, if the monetary incentive is large enough, the favorite implements agent 2's idea (which is ex-post efficient) and eliminates the potential conflict with agent 2. Because the principal can determine the size of the monetary contract, the principal has also some control over the favorite's decision and potential conflict between agents.

In contrast, Rotemberg and Saloner (1995) assumes that the monetary incentives are exogenously fixed and does not study their effect on future conflicts. In Aghion and Tirole (1997), players either have an idea or no idea. Thus, a player with no idea cannot insist on implementing his own idea in their model, and the incentive contract does not affect the players' ex-post decision.

Also note that if $w_H - w_L \geq b_L$, the favorite's decision is *ex-post* efficient because he always implements a weakly better idea. However, if $w_H - w_L < b_L$, then the favorite would implement his own bad idea even if agent 2 has a strictly better idea. Thus, the favorite's decision is not ex-post efficient if $w_H - w_L < b_L$.

Choice of Efforts Suppose that $w_H - w_L \geq b_L$. Each agent's expected utility is as follows:

$$EU_1 = a_1(w_H + b_H) + (1-a_1)a_2 w_H + (1-a_1)(1-a_2)(w_L + b_L) - \frac{1}{2}a_1^2 \quad (6)$$

$$EU_2 = a_1 v_H + (1-a_1)a_2(v_H + b_H) + (1-a_1)(1-a_2)v_L - \frac{1}{2}a_2^2 \quad (7)$$

Agents will choose their effort levels to maximize their own utility. Thus, from the first order conditions, we have

$$\frac{\partial EU_1}{\partial a_1} = (1-a_2)(w_H - w_L + d_b) - a_1 = 0 \quad (8)$$

$$\frac{\partial EU_2}{\partial a_2} = (1-a_1)(v_H - v_L + d_b + b_L) - a_2 = 0 \quad (9)$$

Note that the effort choices are strategic substitutes. Thus, more effort by the other agent reduces the incentives. Also, the favorite's incentives depend on the external monetary incentives $(w_H - w_L)$ and the internal private incentives (d_b), but not on the desire for power (b_L) because he already has power and b_L is guaranteed for him. On the other hand, agent 2 (non-favorite)'s incentives depend on the desire for power (b_L) as well as the monetary incentives $(v_H - v_L)$ and the private motivation (d_b) because agent 2's idea can be chosen when he has a good idea but not when he has a bad idea. An interesting implication is that if two agents differ in b_L, then *from the incentive perspective only*, it would be better to choose the non-favorite as the one with larger b_L because he would work harder[12].

[12]If the principal can extract the private benefit by lowering the wage, the principal may want to choose the favorite as the one with larger b_L to reduce wage payments.

Now suppose that $w_H - w_L < b_L$. Each agent's expected utility is as follows:

$$EU_1 = a_1(w_H + b_H) + (1 - a_1)(w_L + b_L) - \frac{1}{2}a_1^2 \quad (10)$$

$$EU_2 = a_1 v_H + (1 - a_1)v_L - \frac{1}{2}a_2^2 \quad (11)$$

The first order conditions are

$$\frac{\partial EU_1}{\partial a_1} = (w_H - w_L + d_b) - a_1 = 0 \quad (12)$$

$$\frac{\partial EU_2}{\partial a_2} = -a_2 = 0 \quad (13)$$

With $w_H - w_L < b_L$, the favorite always implements his own idea. That is, agent 2's effort has no effect on the team outcome. Thus, not surprisingly, agent 2's optimal effort would be the minimum[13]. On the other hand, the favorite is still motivated by both the monetary incentives and the private motivation.

Optimal Contract We are now ready to state the principal's maximization problem under favoritism. If $w_H - w_L \geq b_L$, the principal will maximize expected profit as follows:

$$\max_{w_H, w_L, v_H, v_L, a_1, a_2} \Pi = (a_1 + a_2 - a_1 a_2)(y_H - w_H - v_H) + (1 - a_1)(1 - a_2)(y_L - w_L - v_L) \quad (14)$$

subject to the participation constraints (6) ≥ 0 and (7) ≥ 0 and the incentive constraints (8) and (9). However, if $w_H - w_L < b_L$, the principal will maximize

$$\max_{a_1, a_2, w_H, w_L, v_H, v_L} a_1(y_H - w_H - v_H) + (1 - a_1)(y_L - w_L - v_L) \quad (15)$$

[13] To be precise, given a minimum effort level of zero, agent 2 will never come up with a good idea. We can avoid this without changing the other qualitative results by assuming that the minimum effort level is positive.

subject to the participation constraints (10) ≥ 0 and (11) ≥ 0 and the incentive constraints (12) and (13).

An interesting question is whether the principal would choose the monetary incentives for the favorite $(w_H - w_L)$ to be less than b_L even though it would induce an ex-post inefficient decision and eliminate all the incentives of agent 2 (non-favorite). The following proposition shows that if b_L is large enough, the ex-post inefficient favoritism with $w_H - w_L < b_L$ is the optimal favoritism.

Proposition 1 *(i) If $b_L \leq h(d_b, d_y)$, then $w_H^* - w_L^* \geq b_L$, and favoritism achieves the first-best outcome, where $h(d_b, d_y) \equiv \frac{d_b + d_y}{d_b + d_y + 1} - d_b$.*

(ii) If $h(d_b, d_y) < b_L \leq h_E(d_b, d_y)$, then $w_H^* - w_L^* = b_L$, and favoritism is ex-post efficient, where $h_E(d_b, d_y) = 2\left(\frac{d_b + d_y}{d_b + d_y + 1}\right) - d_b$. Agent 1 exerts too much effort $\hat{a}_1 (> a_{FB}^*)$, while agent 2 exerts too little effort $\hat{a}_2 (< a_{FB}^*)$.

(iii) If $b_L > h_E(d_b, d_y)$, then $w_H^* - w_L^* < b_L$, and favoritism is ex-post inefficient Agent 1 exerts an effort $\tilde{a}_1$ where $\hat{a}_1 > \tilde{a}_1 > a_{FB}^*$, and agent 2 exerts the minimum effort, $\tilde{a}_2 = 0$.

Proof. See appendix. ■

[Figure 1 here]

Intuitively, from lemma 1, in order to induce the ex-post efficient decision, the monetary incentive to the favorite $(w_H - w_L)$ has to be larger than the favorite's desire for power (b_L). However, there is no guarantee that such a monetary incentive would induce the the ex-ante efficient level of effort. In particular, if b_L is large enough, the monetary incentives that induce ex-post efficient decision will induce too much effort by the favorite (which the principal must compensate for to satisfy the participation constraint). Therefore, if b_L is large enough, it is optimal for the principal to give up inducing the ex-post efficient decision by the favorite.

Note that under favoritism, the favorite workers harder than the other. That is, from the principal's point of view, the favorite has higher probability of having a good idea than the non-favorite. Therefore, even after the efforts are chosen and the ideas are realized, the principal has no incentive to change the favorite. That is, the principal does not need to commit to a particular favorite.[14]

When b_L is large enough, the optimal favoritism exhibits various problems: (i) the favorite makes an inefficient decision by ignoring the other's idea and (ii) the non-favorite is not motivated not only because his monetary incentive is small but also because the favorite ignores even his good idea. Then, will it be optimal for the principal to adopt fairness by giving equal decision right to the agents? To address this question, we first study the optimal contract under fairness.

4 Fairness

Now consider the fairness scheme. The principal gives equal decision rights to the agents. Thus, if the agents agree on the selection of an idea, the selected project is implemented. However, if they do not agree, then either idea is chosen with equal probability.

[14] In Rotemberg and Saloner (1995), the principal hires more able employees to her favorite department as a commitment device. In Rotemberg and Saloner (2000), the principal hires a biased CEO as a commitment device.

Decision Making We focus on the case where $w_H - w_L \geq b_L$ and $v_H - v_L \geq b_L$, because all the other cases are weakly dominated by favoritism. For example, suppose that $w_H - w_L \geq b_L$ and $v_H - v_L < b_L$. Then, when $S = (G, B)$, each agent will insist on implementing his own idea. Thus, the idea will be chosen randomly, and even the bad idea of agent 2 can be chosen. However, under favoritism with the same incentive contract, the favorite can implement his good idea.

When $w_H - w_L \geq b_L$ and $v_H - v_L \geq b_L$, if agent 1 has a strictly better idea, agent 2 would agree to implement agent 1's idea because $v_L + b_L \leq v_H$. Similarly, if agent 2 has a strictly better idea, agent 1 would agree to implement agent 2's idea. However, if the ideas are of equal quality, then they would not agree, and eitheri dea will be chosen with equal probability.

Choice of Efforts Suppose that $w_H - w_L \geq b_L$ and $v_H - v_L \geq b_L$. Each agent's expected utility is as follows:

$$
\begin{aligned}
EU_1 &= a_1 a_2 (\frac{1}{2}(w_H + b_H) + \frac{1}{2} w_H) + a_1(1 - a_2)(w_H + b_H) \\
&\quad + (1 - a_1) a_2 w_H + (1 - a_1)(1 - a_2)(\frac{1}{2}(w_L + b_L) + \frac{1}{2} w_L) - \frac{1}{2} a_1^2 \qquad (16) \\
EU_2 &= a_1 a_2 (\frac{1}{2}(v_H + b_H) + \frac{1}{2} v_H) + a_1(1 - a_2) v_H \\
&\quad + (1 - a_1) a_2 (v_H + b_H) + (1 - a_1)(1 - a_2)(\frac{1}{2}(v_L + b_L) + \frac{1}{2} v_L) - \frac{1}{2} a_2^2 \qquad (17)
\end{aligned}
$$

Then, the first order conditions are

$$
\begin{aligned}
\frac{\partial EU_1}{\partial a_1} &= \frac{b_L}{2} + \frac{a_2}{2} d_b + (1 - a_2)(w_H - w_L + d_b) - a_1 = 0 \qquad (18) \\
\frac{\partial EU_2}{\partial a_2} &= \frac{b_L}{2} + \frac{a_1}{2} d_b + (1 - a_1)(v_H - v_L + d_b) - a_2 = 0 \qquad (19)
\end{aligned}
$$

Note that for both agents, the desire for power (or the difference of preference between agents) as well as private motivation (d_b) increases the incentive of the agent. This is because the probability of implementing one's own idea (and enjoying the private benefit) is greater when the agent has a good idea than when he has a bad idea.

Optimal Contract The principal will maximize the following expected profit:

$$\max_{\substack{w_H, w_L, v_H, v_L, a_1, a_2 \\ w_H - w_L \geq b_L, v_H - v_L \geq b_L}} \Pi = (a_1 + a_2 - a_1 a_2)(y_H - w_H - v_H) + (1 - a_1)(1 - a_2)(y_L - w_L - v_L) \quad (20)$$

subject to the participation constraints $(16) \geq 0, (17) \geq 0$ and the incentive constraints (18) and (19). Proposition 2 characterizes the optimal contract under fairness.

Proposition 2 *(i) If $b_L \leq p(d_b, d_y)$, fairness achieves the first-best outcome, where $p(d_b, d_y) \equiv \frac{2d_y - d_b d_y - d_b^2}{d_y + d_b + 3}$.*

(ii) If $b_L > p(d_b, d_y)$, then $w_H^* - w_L^* = v_H^* - v_L^* = b_L$, and both agents exert too much effort; $a_1 = a_2 = \frac{3b_L + 2d_b}{d_b + 2b_L + 2} > a_{FB}^*$.

Proof. See appendix. ■

[Figure 2 here]

In a fair organization with large private benefit, both agents work hard, often to an excess. Thus, the problem of an unmotivated agent that is characteristic of favoritism does not exist with fairness. Nevertheless, a fair organization requires an additional constraint for ex-post efficiency, that is, $v_H - v_L \geq b_L$ as well as $w_H - w_L \geq b_L$. Consequently, it is not obvious which mode of organization is strictly better.

5 Endogenous Favoritism

Now we are ready to analyze the principal's choice between favoritism and fairness. If favoritism is optimal, then an ex-ante impartial principal with symmetric agents would select favoritism. Thus, favoritism would arise endogenously. The following proposition states the main result of the paper.

Proposition 3 *If b_L is large enough, then favoritism is optimal.*

Proof. See appendix. ■

[Figure 3 here]

Intuitively, for fairness, the principal gives equal decision right to the agents. Thus, to achieve an ex-post efficient decision, whenever one has a strictly better idea, *both* agents have to agree to implement the better idea. Under favoritism, however, only the favorite needs to implement a strictly better idea. Thus, there are more constraints in achieving ex-post efficiency under fairness than under favoritism. Specifically, ex-post efficiency requires $w_H - w_L \geq b_L$ and $v_H - v_L \geq b_L$ under fairness, but only $w_H - w_L \geq b_L$ under favoritism.

On the other hand, under fairness, both agents exert the same amount of effort. However, under favoritism, the favorite exerts more effort than the non-favorite. Since each agent's cost of effort is convex, inducing balanced efforts from the agents is more efficient. Thus, from the ex-ante effort choice perspective, fairness is more efficient than favoritism.

Therefore, when b_L (the desire for power, or the difference of preference between agents) increases, the ex-post efficiency constraints become more binding, and favoritism dominates fairness. That is, favoritism arises endogenously in a symmetric model with an ex-ante impartial and rational principal.

Recall that, from Proposition 1, when b_L is large enough, the optimal outcome with favoritism exhibits classic problems of favoritism: (i) the favorite ignores the other's idea and implement his own even bad idea, and (ii) the favorite is over-motivated and the non-favorite loses incentives. Proposition 2 shows that despite these problems, precisely when b_L is large, favoritism is optimal because it is even more difficult to induce an ex-post efficient decision in a fair organization. This result may explain why favoritism is wide-spread in many organizations and why favoritism is sometimes encouraged in the form of mentoring or career development programs.

If favoritism is entirely due to exogenous personal preference of a decision-maker, it is relatively easy to enforce fairness. An organization may discipline the decision-maker or even replace him/her with an impartial one. Also, as long as the decision-maker's personal bias is not large enough, a strong performance-based incentive will significantly reduce favoritism. Under a performance-based incentive contract, a decision-maker would not exercise favoritism that will significantly reduce the performance.

However, when favoritism arises endogenously and dominates fairness, if an organization replaces the decision-maker with an impartial one, the new decision-maker may select a different favorite, but favoritism will continue. Also, providing strong incentives to the decision-maker is not sufficient because favoritism arises in our model even though the decision-maker is the principal herself (e.g. an owner of a firm). Therefore, enforcing fairness without reducing the fundamental conflicts among agents (possibly through changes in tasks) or the information asymmetry problem can only undermine an organization's performance. In other words, this paper shows that favoritism can be a structural problem of an organization which cannot be solved by focusing on a single decision-maker.

We can also answer why favoritism based on small personal bias appears to cause serious economic inefficiency[15]. Many owners of profit-maximizing firms would not promote someone simply because he/she is a friend, especially if doing so causes serious loss of profits. In our model, the loss of profit comes from the structural problems (e.g. conflicts of agents' interests and asymmetric information) regardless of who the owner promotes. Furthermore, we show that giving equal chance of promotion to all the candidates can reduce the profit even further. Then, the owner may well promote his/her friend or whoever the owner prefers even slightly. Therefore, strong favoritism may appear to be caused by a decision-maker's slight personal bias.

6 Discussion

Single Authority and Group Authority Most previous studies of authority have focused on whether to delegate authority to a single agent, and there are relatively few studies on delegation to a group of agents. However, the delegation to a group of agents, where agents share the decision right, is quite common (e.g. majority decision rule in a committee, in a congress, etc.)

[15] "There are few things that employees resent more than favoritism. It breeds the feeling that it doesn't matter how one performs on the job... The end result is decreased morale which can result in reduced productivity, as employees throw up their hands and take on a "why bother" attitude."

- From http://www.employeesurveys.com/policies/badpol4.htm. by Business Research Lab.

In our model, favoritism is equivalent to delegation to a single agent, and fairness is equivalent to delegation to a group. In particular, if we assume that the principal votes for each agent with equal probability, then the decision under fairness is the same as the decision under a majority rule where all players have the same voting right. For example, if both agents agree, they form a majority and can implement the selected idea regardless of the principal's vote. If the agents disagree, then the principal casts the pivotal vote and the idea is chosen randomly.

Therefore, our model shows when it is optimal to delegate the decision right to a team of agents. When the decision right is shared, it is more costly to induce an ex-post efficient decision because there are more conflicts. However, both agents work hard while only one agent works hard under delegation to one agent. Therefore, when the cost of inducing an ex-post efficient decision (or inducing consensus when an agent has a strictly better idea) is relatively small (i.e. when b_L is small), it is optimal to delegate the decision right to a group of (competing) agents.

Hierarchical Communication vs. Open Communication We can consider favoritism and fairness in terms of communication structure as well. That is, favoritism is equivalent to a hierarchical communication structure where agent 2 reports to agent 1 who then reports to the principal. With hierarchical communication, agent 2 (non-favorite) is not allowed to report to the principal directly. In this case, agent 1 (the favorite) can implement his own idea by reporting (potentially untruthfully) to the principal that he has a good idea and that agent 2 has a bad idea[16]. As with favoritism, if $w_H - w_L \geq b_L$ and $S = (B, G)$, however, agent 1 would truthfully report to the principal that agent 2 has a strictly better idea.

[16] The principal will follow the favorite's recommendation because, as Proposition 1 shows, the favorite exerts more effort and, thus, is more likely to have a good idea.

Fairness is also equivalent to open communication where both agents can report directly to the principal. If $w_H - w_L \geq b_L$ and $v_H - v_L \geq b_L$, then agents will report truthfully when an agent has a strictly better idea. However, if agents have the same quality of idea, then agents will submit conflicting reports that each has a better idea than the other. Then, the principal will have to select an idea randomly because reports are not informative.

Then, our model shows when it is optimal to have hierarchical communication structure despite the concern that agent 1 (the favorite, or a manager) may exaggerate his own idea and denigrate the other's.[17]

7 Conclusion

This paper presents a formal model of favoritism that integrates decision-making, communication, and incentive contracts. Even when the model is symmetric and the principal is ex-ante impartial, favoritism can arise endogenously. Favoritism in our model exhibits the classic problems such as reduced motivation of the non-favored agent and inefficient choice of project. Surprisingly, however, when these problems of favoritism are most severe, a fair organization performs even worse. These results explain why favoritism is wide-spread and why it is hard to remove in many organizations. We also show that favoritism is equivalent to hierarchical communication and that fairness is equivalent to group delegation. Thus, the model provides new insights on the trade-offs between hierarchical and open communication and between single authority and group authority.

[17] An important implicit assumption is that the communication is not verifiable. This is a common assumption in studying organization structure (e.g. see Athey and Roberts 2001, Friebel and Raith 2001, Harris and Raviv 2002) in order to avoid the revelation principle.

Because favoritism (hierarchical communication or delegation) arises endogenously despite its shortcomings, simply changing the decision process, communication structure, or incentive contract without changing the tasks of agents will not achieve the desired result of organizational reform. This conclusion naturally raises the question of how the tasks, or jobs, should be redefined. Insights into the answer of this question can hopefully be reached by future work.

References

[1] Aghion, P. and J. Tirole, 1997, "Formal and Real Authority in Organization," *Journal of Political Economy*, 105, pp. 1-29.

[2] Albright, M. and C. Carr, 1997, 101 Biggest Mistakes Managers Make: And how to Avoid Them, Prentice Hall, Inc.

[3] Athey, S. and J. Roberts, 2001, "Organization Design: Decision Rights and Incentive Contract," *American Economic Review*, 91 (2), pp. 200-205.

[4] Avery, C., J.A. Chevalier, and S. Schaefer, 1998, "Why do Managers Undertake Acquisitions? An Analysis of Internal and External Rewards for Acquisitiveness," *The Journal of Law, Economics, and Organization,* 14(1), pp. 24-43.

[5] Baliga, S. and Sjöström, T., 2001, "Optimal Design of Peer Review and Self-Assessment Schemes," *Rand Journal of Economics*, 32, pp. 27-51.

[6] Comerford, H., 2002, "Findings Report Respectful Workplace Project," Government of Newfoundland and Labrador, mimeo.

[7] Friebel, G. and M. Raith, 2000, "Abuse of Authority and Hierarchical Communication," *forthcoming Rand Journal of Economics.*

[8] Galbraith, J.R., 1997, Designing Organizations, Jossey-Bass Inc., Publishers, San Francisco, CA.

[9] Garicano, L., 2000, "Hierarchies and the Organization of Knowledge in Production," *Journal of Political Economy*, 108 (5), pp. 874-904.

[10] Garicano, L., Palacios, I., C. Prendergast, 2001, "Favoritism under Social Pressure," NBER Working Paper #8376.

[11] Harris, M. and A. Raviv, 2002, "Allocation of Decision-Making Authority," University of Chicago, mimeo.

[12] Milgrom, P., 1988, "Employment Contracts, Influence Activities, and Efficient Organization Design," *Journal of Political Economy,* 96 (1), pp. 42-60.

[13] Murray V. and J. Gantz, 1980, "Games Executives Play: Politics at Work," *Business Horizons*, December, p. 14.

[14] Nelson, R. B. and P. Economy, 1995, *Better Business Meetings*, Burr Ridge, IL: Irwin Inc.

[15] Prendergast, C. and R.H. Topel, 1996, "Favoritism in Organization," *Journal of Political Economy*, 104 (5), pp. 958-978.

[16] Radner, R, 1993, "The Organization of Decentralized Information Processing," *Econometrica*, 61, pp. 1109-1146.

[17] Rotemberg, J. and G. Saloner, 1994, "Benefits of Narrow Business Strategies," *American Economic Review*, 84, pp. 1330-1349

[18] ———————, 1995, "Overt interfunctional conflict (and its reduction through business strategy)," *Rand Journal of Economics*, 26 (4), pp. 630-653

[19] _______________, 2000, "Visionaries, Managers, and Strategic Direction," *Rand Journal of Economics*, 31 (4), pp. 693-716

Appendix

Proof of Proposition 1 (i) From lemma 1, $w_H - w_L \geq b_L$ is the constraint for ex-post efficient decision. Suppose that this constraint is not binding. Then, since the agent is risk-neutral, the principal will implement the first-best effort. To induce the first-best effort, from (8) and (9), the principal should set $w_H^* - w_L^* = \frac{(1-b_L)a_{FB}^* - d_b}{1-a_{FB}^*}$ and $v_H^* - v_L^* = \frac{a_{FB}^*}{1-a_{FB}^*} - b_H$. To satisfy our assumption that $w_H - w_L \geq b_L$, we must have $\frac{(1-b_L)a_{FB}^* - d_b}{1-a_{FB}^*} \geq b_L$ or $\frac{d_b+d_y}{d_b+d_y+1} \geq b_H = d_b + b_L$. Therefore, the first-best outcome can be achieved if $b_L \leq \frac{d_b+d_y}{d_b+d_y+1} - d_b$.

(ii) Suppose $b_L > \frac{d_b+d_y}{d_b+d_y+1} - d_b$. Then, from above, to induce ex-post efficient decision, it is optimal to set.$w_H - w_L = b_L$. It is straightforward to see that (6)-(9) are all binding. Thus, we can solve for a_1, v_L, v_H, and w_L in terms of a_2 from these binding constraints. Substituting these expressions into the objective function (14) and solving for a_2 yields $a_1 = b_H$ $(> a_{FB}^*)$, $a_2 = (d_y + d_b)(1 - b_H)$ $(< a_{FB}^*)$, $v_H - v_L = d_y - b_L$. Let us denote the expected profit by $\pi^E(dy, d_b, b_L)$.

If $b_L > \frac{d_b+d_y}{d_b+d_y+1} - d_b$ and if the principal gives up ex-post efficiency, then $w_H - w_L < b_L$. Thus, from the binding constraints (10)-(13), $a_2 = 0$, $v_H = v_L = 0$, $w_L = -\frac{1}{2}a_1^2 - b_L$, and $w_H = -b_H - \frac{1}{2}a_1^2 + a_1$. Substituting these expressions into the objection function (15) and solving for a_1 yields $a_1 = d_y + d_b > a_2 = 0$ and $w_H - w_L = d_y > v_H - v_L = 0$. Let us denote this expected profit by $\pi^I(d_y, d_b, b_L)$. With some tedious algebra, we can show that $\pi^E(dy, d_b, b_L) \geq \pi^I(d_y, d_b, b_L)$ iff $b_L \leq 2\frac{d_b+d_y}{d_b+d_y+1} - d_b$.

Proof of Proposition 2 From symmetry, let $a_1 = a_2 = a$. From (18), to induce the first best effort level $a_{FB}^* = \frac{d_b+d_y}{d_b+d_y+1}$, the required incentive $(w_H - w_L)$ is $\frac{2d_y - b_L(d_y+d_b+1) - d_b(d_b+d_y)}{2}$. If this is larger than b_L, then we have the first best outcome. That is, the first best outcome can be achieved if

$$\begin{aligned}\frac{2d_y - b_L(d_y + d_b + 1) - d_b(d_b + d_y)}{2} &\geq b_L \\ &\Updownarrow \\ b_L &\leq \frac{2d_y - d_b(d_y + d_b)}{d_y + d_b + 3}.\end{aligned}$$

If $b_L > \frac{2d_y - d_b(d_y+d_b)}{d_y+d_b+3}$, then $w_H - w_L$ and $v_H - v_L$ are binding at b_L. From (18), $a = \frac{3b_L+2d_b}{d_b+2b_L+2}$ $(> a^*_{FB})$.

Proof of Proposition 3 (i) Figure A.1 illustrates the results from Propositions 1 and 2 for a given d_y. If $b_L \leq h(d_b, d_y)$, favoritism achieves the first-best outcome (area A and B in figure A.1). If $b_L \leq p(d_b, d_y)$, then fairness achieves the first-best outcome (area A and C in figure A.1). Also, if $b_L > h_E(d_b, d_y)$, then active favoritism is more profitable for the principal than passive favoritism (area E in figure A.1). Note that from Assumptions 1 and 2, we only focus on (d_b, b_L) such that $b_L \leq 1 - d_b$ and $d_b \leq 1 - d_b$.

[Figure A.1 here]

If either of the two modes of organization achieves the first-best outcome, the ranking between the two is simple. For a given d_y, if $(d_b, b_L) \in A$, then both yield the same first-best outcome. If $(d_b, b_L) \in B$, then favoritism clearly dominates fairness. Similarly, if $(d_b, b_L) \in C$, then fairness clearly dominates favoritism.

Now, suppose that $(d_b, b_L) \in D \cup E$. To rank these two modes of organization, define $H(b_L; d_b, d_y) = \pi_V(b_L; d_b, d_y) - \pi_R(b_L; d_b, d_y)$ where π_V is the second-best profit of the ex-post efficient favoritism, and π_R is the second-best profit of fairness. Tedious algebra shows that $H(b_L, d_b, d_y) = \frac{1}{2}(2b_L + d_b + 2)^{-2} F(b_L; d_b, d_y)$ where $F(b_L; d_b, d_y)$ is the quadruple function of b_L for any given d_b and d_y. Therefore, for a given d_b and d_y, favoritism dominates fairness if and only if $F(.) \geq 0$.

Additional tedious algebra shows that $F(0; d_b, d_y) > 0$, $F(h_E(d_b, d_y); d_b, d_y) > 0$, $F(1 - d_b; d_b, d_y) > 0$, and $F(p(d_b, d_y); d_b, d_y) < 0$. It is also straightforward to show that the coefficient of b_L^4 in $F(b_L; d_b, d_y)$ is negative. Thus, $F(b_L; d_b, d_y)$ should resemble Figure A.2. That is, for any given d_b and d_y, there exists a unique compact interval $[\underline{b}(d_b, d_y), \overline{b}(d_b, d_y)]$ such that if $\underline{b}(d_b, d_y) \leq b_L \leq \overline{b}(d_b, d_y)$, then $F(b_L; d_b, d_y) \leq 0$, i.e., the second-best fairness is better than the second-best favoritism. Note that $\underline{b}(d_b, d_y) \leq p(d_b, d_y) \leq \overline{b}(d_b, d_y) < h_E(d_b, d_y)$.

[Figure A.2 here]

Suppose that $d_b \geq \widehat{d_b}$, where $p(d_b, d_y)$ intersects $h(d_b, d_y)$ when $d_b = \widehat{d_b}$. As Figure A.1 shows, when $b_L \leq p(d_b, d_y)$, fairness achieves the first-best outcome. Thus, it is weakly better than favoritism. If $p(d_b, d_y) < b_L < \overline{b}(d_b, d_y)$, then fairness is strictly better than favoritism. However, if $b_L > \overline{b}(d_b, d_y)$, then favoritism is strictly better than fairness. Note that as b_L increases, the likelihood that favoritism is strictly better than fairness increases. (see also Figure 3)

Suppose that $d_b < \widehat{d_b}$. Then, we must have that $\overline{b}(d_b, d_y) < h(d_b, d_y)$. Otherwise, there exists a b_L such that the profit of the second-best fairness is higher than the profit of the first-best favoritism. A contradiction. Therefore, if $d_b < \widehat{d_b}$, fairness can never be strictly better than favoritism, and they will be equivalent only when each achieves the first-best outcome (i.e. if

$(d_b, b_L) \in A$). It still holds true that as b_L increases, it is more likely that favoritism is strictly better than fairness.

(ii) $p(d_b, d_y)$ is strictly increasing in d_y because $\frac{\partial p(d_b, d_y)}{\partial d_y} = \frac{6-d_b}{(d_b+d_y+3)^2} > 0$ for $d_b < 1-d_y$. Thus, from Figure 3, the area where fairness is optimal will increase relatively more as d_y increases.

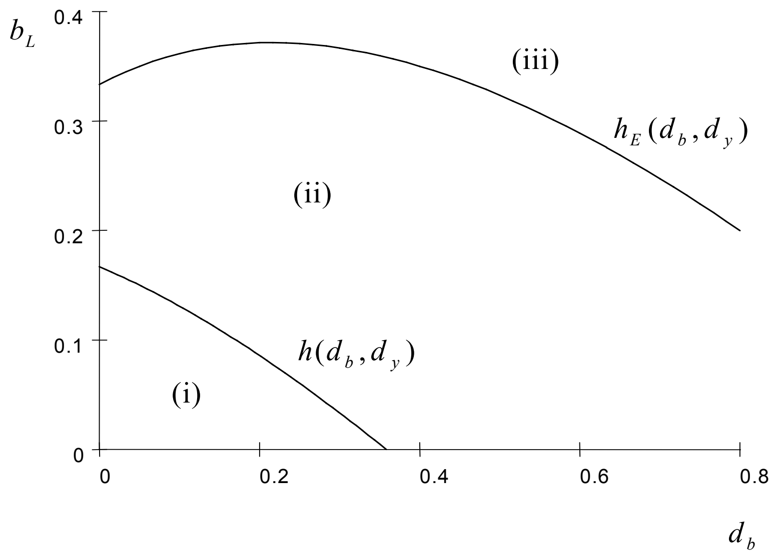

Figure 1 Favoritism ($d_y = 0.2$)

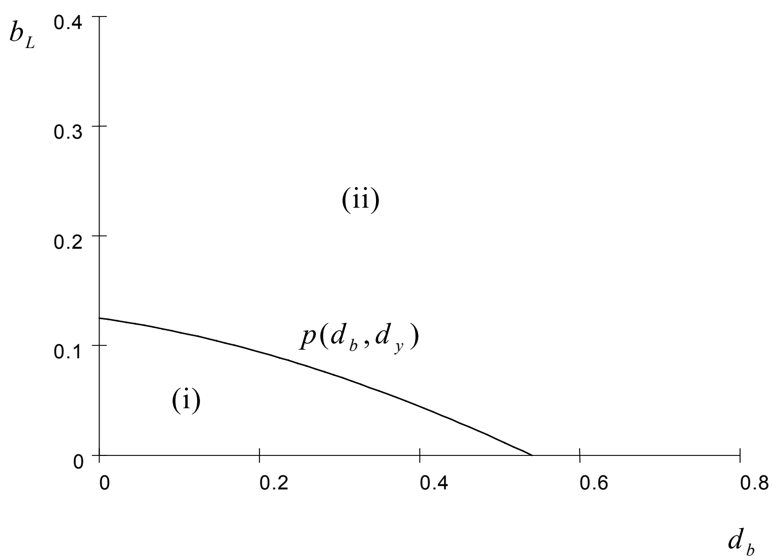

Figure 2 Fairness ($d_y = 0.2$)

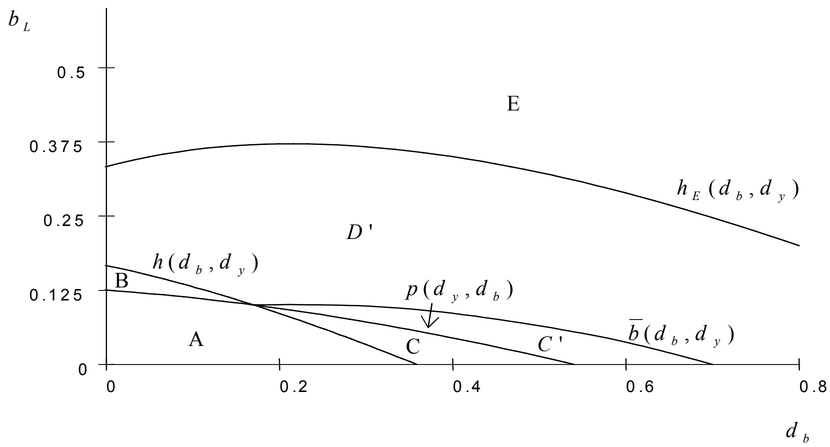

Figure 3 Optimal Mode of Organization ($d_y = 0.2$)

Note: If $(d_b, b_L) \in A$, both favoritism and fairness achieve the first-best outcome. If $(d_b, b_L) \in C \cup C'$, fairness is optimal. If $(d_b, b_L) \in B \cup D' \cup E$, then favoritism is optimal.

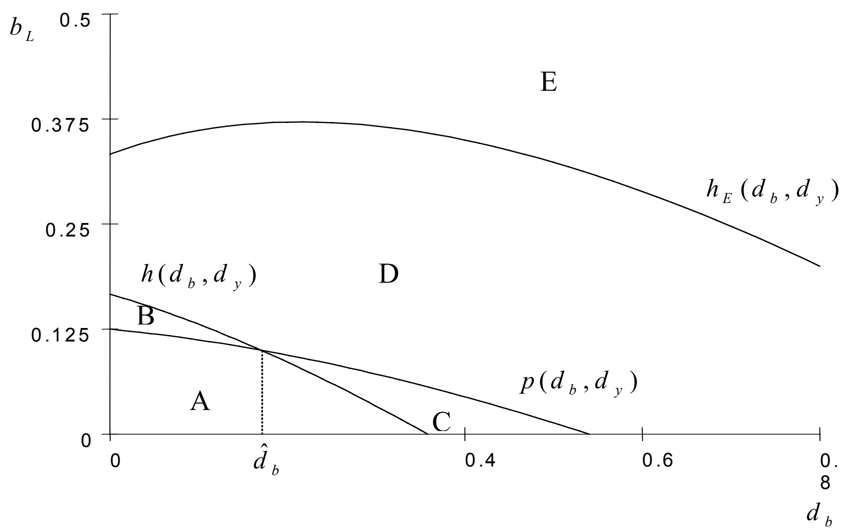

Figure A.1 Favoritism vs. Fairness ($d_y = 0.2$)

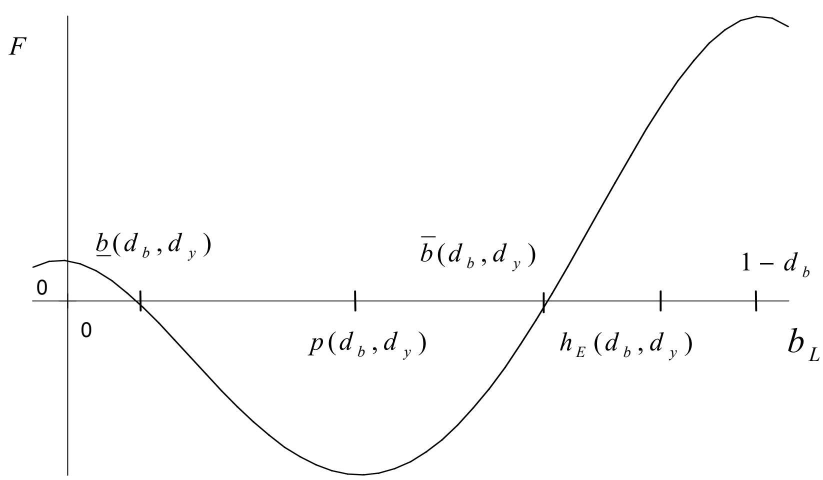

Figure A.2 Favoritism vs. Fairness (for given d_b and d_y).