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American Idol: Should it be a Singing Contest or a Popularity Contest?**

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Abstract

Using the popular FOX TV reality show, *American Idol*, this paper makes a contribution to the literatures on the design of contests, the allocation of voting rights in committees, and the desirability of low-powered incentive schemes. In *American Idol*, the judges, who are presumably experts in evaluating singing effort, have no voting power when the field is narrowed to the top twenty-four contestants. It is only the votes of viewers that count. In the 2007 season of the show, one of the judges, Simon Cowell, threatened to quit the show if a contestant, Sanjaya Malakar, who was clearly a low-ability contestant, won the competition. He was concerned that the show was becoming a popularity contest instead of a singing contest. Is this a problem? Not necessarily. I show that, under certain conditions, making success in the contest dependent on a contestant's popularity and not solely on her singing ability or performance, could paradoxically increase aggregate singing effort. It may be optimal to give the entire voting power to the viewers whose evaluation of singing effort is *noisier*.

Keywords: American Idol, contests, incentives, tournaments, voting.
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1. Introduction

American Idol and *Dancing with the stars* are two very successful reality shows[1] on the American TV networks, Fox and ABC, respectively.[2] *American Idol* is particularly successful. With the exception of the *Super Bowl* and the *Academy Awards*, *American Idol* is the highest rated *viewed* [3]program on U.S. national television and is broadcast in over 100 countries outside of the USA.

American Idol is a singing contest and *Dancing with the Stars* is a dancing contest. A unique feature of these two TV shows is that the votes of viewers count in determining the winner of the show. For example, in *Dancing with the stars*, the votes of both the viewers and the judges (i.e., the experts) count. In *American Idol*, only the votes of the judges count in the preliminary rounds and only the votes of viewers count in advanced rounds (i.e., when the field is narrowed to the top twenty-four contestants). Since the judges and viewers may have different preferences, these can sometimes lead to problems. Indeed, in the 2007 season of *American idol*, there was a low-ability contestant, Sanjaya Malakar, who the judges did not like but kept advancing through the rounds because the viewers liked him. One of the judges, Simon Cowell, threatened to

1*American Idol*, which debuted in 2002, is an offshoot of *Pop Idol*, a British television (singing) reality show which debuted on the ITV network in 2001. As noted at wikipedia.com, the Idol series has become an international franchise; it has spun off many successful shows such as *Australian Idol*, *Latin American Idol*, *Idols* (Denmark, Netherlands, Finland, South Africa), *Canadian Idol*, *Idols West Africa*, *Indian Idol*, *Indonesian Idol*, *New Zealand Idol*, Hay Superstar, *Nouvelle Star* , *Pinoy Idol (Philippines)*, *Deutschland sucht den Superstar, Singapore Idol, Malaysian Idol, Vietnam Idol, Music Idol, Ídolos Brazil, Ídolos Portugal, and Super Star*.

[2]Some of the top twelve finalists on *American Idol* have gone on to chalk successes: six of them of have been nominated for the 2008 Grammy awards. One of them, Carrie Underwood has already won two Grammys and Jennifer Hudson, through the exposure that the show gave her, had the opportunity to star in the movie *Dreamgirls* which won her an Oscar in 2007. The websites for both shows can be found at: http://www.americanidol.com/ and http://abc.go.com/primetime/dancingwiththestars/index?pn=index

[3] Note that the *Super Bowl* and *Academy Awards* take place only once in a year. In each season, *American Idol* is shown twice a week over a 4-month period. In this sense, it is the number one rated show in America.

quit the show if Sanjaya won the competition.

To be sure, *American Idol* is a singing contest, but it sometimes runs the risk of becoming a popularity contest. A contestant could be popular on the show based on his/her singing ability or performance. However, by popularity, I mean components of a contestant's success that are based on his *non-singing* performance or ability (i.e., popularity based on reasons other than a contestant's ability to sing). This is consistent with Simon Cowell's frustration in the Sanjaya Malakar episode.

One way of dealing with this apparent popularity problem is to allocate the entire voting power to the judges. However, that might lead to a huge fall in TV ratings and revenue. A reason why the votes of viewers is allowed to determine the winner(s) is because it gives the viewers a sense of participation and increases the numbers of viewers leading to an increase in TV ratings and revenue. Allowing the votes of viewers to count increases the excitement of the show. There may well be a trade-off between this participation effect and the possible disincentive effect on singing effort of allowing any Tom, Dick, and Harry who has a phone to vote.

In *American Idol*, as mentioned above, only the votes of judges count in preliminary rounds. This allows the judges to narrow the set of possible contestants in order to possibly minimize any subsequent errors in selection that might emerge when viewers' votes later determine the winner(s) in subsequent rounds. However, as the Sanjaya case demonstrated, this cannot eliminate this risk. Alternatively, in *Dancing with the stars* this problem may have been addressed by assigning non-zero weights to the votes of the judges and viewers. But how should these weights be determined? What factors should be taken into account? Could the *American Idol* allocation of voting power be optimal? In this paper, I show, among others, that differences in the abilities of the contestants should be an important consideration.

While the goal of *American Idol* is to discover talent who will hopefully become future stars in the music industry, I assume that the organizers want to simultaneously boost current aggregate singing effort in the show. Boosting aggregate effort in the competition is good for the show's TV rating and increases revenue.

I show that, under certain conditions, making success in the contest dependent on a contestant's popularity and not solely on her singing ability or performance, could paradoxically increase aggregate singing effort. By allowing the votes of viewers to count, sufficient noise is introduced into the contest since the viewers tend to care more, relative to the judges, about factors other than a contestant's singing ability or performance. This low-powered incentive can paradoxically lead to an increase in aggregate efforts because it levels the playing field between high-ability contestants and low-ability contestants inducing the low-ability contestants to exert more effort which, in turn, puts pressure on the high-ability to work harder.

This paper goes beyond *American Idol*. It makes the following more general contributions: First, it shows that increasing the degree of noise or luck in a contest could lead to an increase in aggregate efforts, if there are substantial differences among the contestants. I am not aware of this result in literature on contests. Second, it contributes to an understanding of the allocation of voting weights in contests administered by a committee. Third, it contributes to the recent economics literature which shows that low-powered incentives may enhance efficiency (see, for example, Francois and Vlassopoulos (2007) for a survey).

I demonstrate the main result of the paper in the next section and relate it to other results in the literature on contests and incentives. Section 3 concludes the paper.

2. An American-Idol type contest: a model

While *American Idol* and *Dancing with the Stars* are dynamic contests, I illustrate the key idea of this paper by analyzing a static contest. This makes sense if the contestants focus on a round at a time. Indeed, most of the contestants in *American Idol* when asked about their thoughts and preparation for future rounds invariably respond that they are only focusing on the current round.

Consider a singing contest, such as *American Idol*, *Canadian Idol*, or *Pop Idol* with two risk-neutral contestants. Suppose a singing effort (performance) of x_k by contestant k translates into $q_k = x_k + \eta_k$ votes by the judges and $y_k = x_k + \varepsilon_k$ votes by viewers, k = 1,2.[4] Assume that ε_k and η_k are independently distributed random variables.[5] Also, $Cov(\varepsilon_1, \varepsilon_2) = Cov(\eta_1, \eta_2) = 0$.

I assume that ε_k and η_k are each normally distributed with mean zero and variances, σ_ε^2 and σ_η^2 respectively. In what follows, I assume that $\sigma_\varepsilon^2 > \sigma_\eta^2 > 0$. This assumption is motivated by the following two reasons: (i) the judges may care more about effort in the contest than the viewers. The viewers may care more about a

[4] My treatment of the judges' votes is analogous to the voting rule in *Dancing with the Stars* and figure skating competitions. Each judge in these contests scores a contestant's performance out of 10 and a contestants' overall score is the sum of the judges' scores. Amegashie (2006) studies the incentive effects of voting by judges in international figure skating within the context of the figure skating scandal at the 2002 winter Olympics in Salt Lake City, Utah, USA.
[5] To the extent that the judges' votes and/or comments are observed by the viewers in both *American Idol* and *Dancing with the Stars* before the viewers cast their votes, one may argue that the judges' votes could affect components of the viewers' vote function. For simplicity and to allow me focus on the main argument of the paper, I do not consider this possible effect.

contestant's popularity or personality relative to the judges, and (ii) the judges, being experts, can evaluate singing effort better than the viewers.

Let $V > 0$ be the prize of winning the contest. Let $C_k(x_k) = \theta_k C(x_k)$ be the cost of effort to contestant k, where θ_k is a positive parameter and $C(x_k)$ is increasing and strictly convex. If $\theta_1 < \theta_2$, then contestant 1 has a higher ability than contestant 2 since his cost of exerting effort is lower.

Let α be the weight given to the votes of viewers, where $0 \le \alpha \le 1$. Then contestant k will win the contest, if $\alpha y_k + (1-\alpha)q_k \ge \alpha y_j + (1-\alpha)q_j$, k = 1, 2, j =1,2, and $k \neq j$. Then contestant 1's payoff is

$\Pi_1 = \Pr(\alpha y_1 + (1-\alpha)q_1 \ge \alpha y_2 + (1-\alpha)q_2)V - \theta_1 C(x_1) = \Pr(m \le x_1 - x_2) - \theta_1 C(x_1)$,

where $m \equiv \alpha(\varepsilon_2 - \varepsilon_1) + (1-\alpha)(\eta_2 - \eta_1)$. Since ε_k and η_k are normally distributed with mean zero and variances σ_ε^2 and σ_η^2, it follows that m is normally distributed with mean zero and variance $\sigma^2 = \alpha^2(\sigma_\varepsilon^2 + \sigma_\varepsilon^2) + (1-\alpha)^2(\sigma_\eta^2 + \sigma_\eta^2)$. Let g be the density function of m and G be its distribution function.

We can write contestant 1's payoff as

$$\Pi_1 = G(x_1 - x_2)V - \theta_1 C(x_1). \tag{1}$$

Similarly, contestant 2's payoff is

$$\Pi_2 = G(x_2 - x_1)V - \theta_2 C(x_2). \tag{2}$$

First-order conditions for an interior solution require that $g(x_1 - x_2)V - \theta_1 C'(x_1) = 0$ and $g(x_2 - x_1)V - \theta_2 C'(x_2) = 0$. This can be rewritten as

$$\frac{\partial \Pi_1}{\partial x_1} = \frac{1}{\sigma\sqrt{2\pi}} \exp\left(-\frac{(x_1 - x_2)^2}{2\sigma^2} \right) V - \theta_1 C'(x_1) = 0, \tag{3}$$

and

$$\frac{\partial \Pi_2}{\partial x_2} = \frac{1}{\sigma\sqrt{2\pi}} \exp\left(-\frac{(x_2 - x_1)^2}{2\sigma^2} \right) V - \theta_2 C'(x_2) = 0 . \quad (4)$$

From (3) and (4), it follows that, in equilibrium, $\theta_1 C'(x_1^*) = \theta_2 C'(x_2^*)$. Then the strict convexity of $C(x_k)$ implies that $x_1^* > x_2^*$, if $\theta_1 < \theta_2$. Therefore, in equilibrium, the contestant with the higher ability exerts a greater effort. Without any loss of generality, I assume that $\theta_2 \geq \theta_1$. Hence, contestant 1 is has a higher ability than contestant 2.

As in tournament models, the existence of pure-strategy equilibria is not guaranteed. Pure-strategy equilibria exist if the variance of the error terms is sufficiently high.[6] To elaborate on this, note that second-order conditions require $g'(x_1 - x_2)V - \theta_1 C''(x_1) < 0$ and $g'(x_2 - x_1)V - \theta_2 C''(x_2) < 0$. This condition holds for the high-ability contestant since $g'(x_1 - x_2) < 0$ given $x_1^* > x_2^*$ and $C(x_1)$ is strictly convex. However, it may not hold for the low-ability contestant. We can rewrite the low-ability contestant's second-order condition as

$$-\frac{(x_2^* - x_1^*)}{\sigma^3\sqrt{2\pi}} \exp\left(-\frac{(x_2^* - x_1^*)^2}{2\sigma^2} \right) V - \theta_2 C''(x_2^*) < 0 \quad (5)$$

The first-term on the left hand side is positive since $x_1^* > x_2^*$. It attains a maximum value at $x_2^* - x_1^* = -\sigma$. Therefore, a sufficient but not necessary condition for (5) to hold is

$$\frac{V}{\sigma^2\sqrt{2\pi}} \exp\left(-\frac{1}{2} \right) - \theta_2 \min[C''(x_2^*)] < 0 . \quad (6)$$

[6] See Lazear and Rosen (1981) and Nalebuff and Stiglitz (1983). As noted by Lazear and Rosen (1981, fn. 2), "Contests are feasible only if chance is a significant factor." In the extreme case where the variance of the error terms is zero, the contest becomes a variant of a non-stochastic all-pay auction which is known to have no equilibrium in pure strategies (Hillman and Riley, 1989; Baye et al., 1996).

To simplify the analysis, I assume that $C(x_k) = \exp(x_k)$, k = 1,2.[7] Then since $x_2 \geq 0$ and $C''(x_2) = \exp(x_2)$ is monotonically increasing in x_2, it follows that $\min[C''(x_2^*)] = \exp(0) = 1$. Hence we can rewrite (6) as

$$\frac{V}{\sigma^2\sqrt{2\pi}}\exp\left(-\frac{1}{2}\right) - \theta_2 < 0 \tag{6a}$$

Then there exists an interior solution if σ^2 is sufficiently high such that (6a) holds.[8]

Given that $\theta_1 C'(x_1^*) = \theta_2 C'(x_2^*)$ holds in equilibrium, it follows that $\theta_1 \exp(x_1^*) = \theta_2 \exp(x_2^*)$. So $x_1^* = \ln(b) + x_2^*$, where $b \equiv \theta_2/\theta_1 \geq 1$. Putting $x_1^* = \ln(b) + x_2^*$ into (3) gives

$$\frac{\partial \Pi_1}{\partial x_1} = \frac{1}{\sigma\sqrt{2\pi}}\exp\left(-\frac{(\ln(b))^2}{2\sigma^2}\right)V - \theta_1 \exp(x_1^*) = 0, \tag{7}$$

Aggregate effort $x_1^* + x_2^* = 2x_1^* - \ln(b) > 0$. Hence, I investigate the effect of the voting weight of the viewers on aggregate effort by differentiating equation (7) with respect to α noting that x_1^* and $\sigma^2 = 2\alpha^2\sigma_\varepsilon^2 + 2(1-\alpha)^2\sigma_\eta^2$ are functions of α. This gives

$$\frac{\partial x_1^*}{\partial \alpha} = \frac{\lambda V[(\ln(b)/\sigma)^2 - 1]}{\sigma^2\theta_1 \exp(x_1^*)\sqrt{2\pi}}\frac{\partial \sigma}{\partial \alpha}, \tag{8}$$

where $\lambda \equiv \exp\left(-\frac{(\ln(b))^2}{2\sigma^2}\right)$.

[7] It is not unusual to obtain results in tournament models by assuming specific functional forms for cost, utility, or density functions. See, for example, part of the discussion in Nalebuff and Stiglitz (1983).
[8] Given that (6a) holds, the objective functions of both contestants are strictly concave for all effort levels and hence the equilibrium effort levels are unique.

Now $\frac{\partial \sigma}{\partial \alpha} > 0$ if $\alpha \sigma_\varepsilon^2 > (1\text{-}\alpha)\sigma_\eta^2$. This holds if σ_ε^2 is sufficiently bigger than σ_η^2. In other words, *relative to the judges*, the viewers' voting behavior is influenced sufficiently more by factors other than the singing effort of the contestants. As argued previously, I interpret this as meaning that the viewers are influenced more by the popularity of contestants than the judges are.

When the contestants are identical (i.e., $\theta_1 = \theta_2$), then b = 1 and $x_1^* = x_2^* = x^*$. So ln(b) = 0. Hence $\partial x^* / \partial \alpha < 0$ if $\partial \sigma / \partial \alpha > 0$. Therefore, if the contestants are identical increasing the noise in the contest will unambiguously decrease aggregate efforts.

If the contestants are non-identical, then b > 1. It follows that if $\partial \sigma / \partial \alpha > 0$ *and* $(\ln(b)/\sigma)^2 - 1 > 0$, the derivative in (8) is positive. The latter condition holds if σ^2 is sufficiently low and/or b is sufficiently high. So under these conditions, an increase in the voting weight of the viewers, whose vote is influenced *relatively* more by factors other than the singing effort of the contestants, could paradoxically lead to an increase in the aggregate singing effort in the contest. This means that $\alpha^* = 1$ *could* be optimal.

To elaborate, note that $(\ln(b)/\sigma)^2 - 1 > 0$ and the second-order condition in (6a) imply

$$0.242V/\theta_2 < \sigma^2 < \left(\ln(\theta_2/\theta_1)\right)^2 \tag{9}$$

Also,

$$x_1^* = \ln(0.39904V/\theta_1\sigma) - (\ln(\theta_2/\theta_1)/\sigma)^2 \tag{10}$$

which is, of course, positive if $\ln(0.39904V/\theta_1\sigma) > (\ln(\theta_2/\theta_1)/\sigma)^2$. Finally, we also require $x_2^* = x_1^* - \ln(\theta_2/\theta_1) > 0$.

As an example, suppose V = 10, $\theta_1 = 0.1$, $\theta_2 = 0.8$, and $\sigma = 2$. Then $x_1^* = 2.4528$ and $x_2^* = 0.3733$. However, if σ increases from 2 to 2.02, each contestant's effort increases such that $x_1^* = 2.4535$ and $x_2^* = 0.3740$. Notice that the restriction in (9) is satisfied since, in both cases, $3.025 = 0.242V/\theta_2 < \sigma^2 < [\ln(8)]^2 = (2.079)^2$. A plot of x_1^*, taking into account the restriction in (9), shows that aggregate effort is increasing in the interval $\sigma \in [1.8, 2.078]$.[9] Suppose then that $\sqrt{2\sigma_\varepsilon^2}$ and $\sqrt{2\sigma_\eta^2}$ belong to the interval [1.8, 2.078] *and* $\sigma_\varepsilon > \sigma_\eta$. Then $1.8 \le \sigma = \sqrt{2(\alpha)^2\sigma_\varepsilon^2 + 2(1-\alpha)^2\sigma_\eta^2} \le 2.078$ attains its highest value at $\alpha = 1$. Therefore, only the viewers should vote, if the goal is to maximize aggregate efforts (i.e., $\alpha^* = 1$). But suppose that $\sqrt{2\sigma_\eta^2} \in [1.8, 2.078)$ and $\sqrt{2\sigma_\varepsilon^2} > \ln(8) = 2.079$, then $\alpha = 1$ is no longer optimal since the restriction in (9) is violated. Instead, it is optimal to have $0 < \alpha^* < 1$ such that

$$\sqrt{2\sigma_\eta^2} < \sigma = \sqrt{2(\alpha^*)^2\sigma_\varepsilon^2 + 2(1-\alpha^*)^2\sigma_\eta^2} \le 2.078 .$$

[9] The actual interval is [1.8, 2.079). One may argue that a cost ratio of b = 8 between the contestants is too high and unrealistic in the real word. Such an argument takes models and the results thereof too literally. The main point is that the positive relationship between aggregate effort and the variance of the noise holds if the contestants are *sufficiently* different (i.e., if there are outstanding contestants). It is the intuition and economics behind this result, as discussed in the next section, that matter. If one were to literally put too much weight on the numbers, then one might as well question whether contestants in the real world are risk-neutral, have exponential cost functions, know how to differentiate functions, understand probability theory, maximize expected payoffs, etc. Of course, macroeconomists who calibrate the "real world" and, to some extent, experimental economists who try to estimate parameters by fitting theoretical models to experimental data, worry about how realistic their numbers are (e.g., the degree of risk-aversion or the elasticity of intertemporal substitution). The purpose of this paper is not to fit models to data. I am only interested in a simple comparative static question namely "what happens to aggregate effort in a contest when the level of noise is increased?"

The positive relationship between aggregate effort and the variance of the noise holds for $7.4 \leq b \leq 8$ although the feasible interval for σ is smaller for smaller values of b. It does not hold for $b < 7.4$.

The above analysis leads to the following proposition:

Proposition 1: *Consider a contest, such as American Idol, with expert judges and non-expert judges (i.e., the viewers). If (i) the viewers' voting behavior is noisier than that of the expert judges, (ii) the difference in the ability of the contestants is sufficiently high, and (iii) the variance of the noise, when the viewers have the entire voting power, is sufficiently low, then giving all the voting power to the viewers will lead to an increase in aggregate effort in the contest. On the other hand, if conditions (i) and (ii) are satisfied but (iii) is violated, then it is optimal to give some voting power to both the expert judges and viewers.* [10]

2.1 Discussion and relation to previous literature

The intuition for the result in the preceding paragraph is based on a result in contests which is that the more level is the playing field in a contest, the higher is aggregate efforts. In the same vein, increasing the voting weight of the viewers introduces more noise into the contest and does not make success too sensitive to effort. This levels the playing field by giving low-ability contestants a reasonable chance of

[10] In a different context, Myerson (1991) shows that a noisy communication channel can improve information transmission relative to a non-noisy communication channel. Blume, Board, and Kawamura (2007) extend the seminal contribution in Crawford and Sobel (1982) model of strategic information transmission by incorporating communication error (i.e, noise). An informed sender (i.e., an expert) sends a message to an uninformed receiver. With some probability, messages sent will not be received. Instead received messages are drawn from a fixed error distribution. Otherwise, messages go through as sent. Blume, Board, and Kawamura (2007) show that this noisy communication channel is welfare-improving, if the noise is sufficiently small. Specifically, there is an equilibrium of the noise model that is Pareto superior to all equilibria of the Crawford-Sobel model.

success and thereby inducing them to boost their effort. By boosting their effort, they force the high-ability contestants to also boost their effort (i.e., $\partial x_1^* / \partial x_2^* > 0$). It is important to note that this effect is a *strategic* effect. Knowing that the effort of a high-ability contestant does not have a very strong impact on his success in the contest induces a low-ability contestant to exert more effort than he would otherwise. And this forces the high-ability contestant to react accordingly.

To be sure, there are two opposing effects: a contestant has the incentive to slack if the contest becomes *noisier*. For want of a better term, I refer to this as the *non-strategic* effect. However, the strategic effect described above may be strong enough to counteract this *non-strategic* effect. The ambiguity of the derivative in (8) is the result of these two opposing effects. This strategic effect exists when the contestants are *non-identical* (i.e., $b > 1$) and it is very strong if the difference in the abilities of the contestants is sufficiently high (i.e., b is sufficiently high). When the contestants are identical, then by definition, there cannot be a change in the contest that will level the playing field anymore than it already is.[11]

On the preceding point, it is interesting to note that Sanjaya Malakar, realizing that he had a decent chance of being the winner or advancing to subsequent rounds (in *American Idol*) tried harder to improve upon his singing performance. Of course, the viewers do not vote entirely on popularity. A contestant's singing performance also

[11]Based on the Nalebuff and Stiglitz (1983) framework, Mclaughlin (1988) found that increasing the variance of the noise in a tournament with *identical* contestants could lead to an increase in efforts. No intuition is given for this result and, unlike this paper, his result does not hinge on differences in the abilities of the contestants. Also, the production function in Nalebuff and Stiglitz (1983) is of the form $y_k = \eta x_k + \varepsilon_k$. It is the variance of the common noise variable η (not the variance of the idiosyncratic noise, ε_k) that accounts for this result. Nalebuff and Stiglitz (1983) also found that an increase in the variance of the common noise could increase welfare. I am not aware of any paper in the literature on tournaments that argues that aggregate efforts will be higher as the tournament becomes noisier, if the contestants are sufficiently non-identical.

influences their votes. That was partly why Sanjaya Malakar was eventually voted out after he made it into the top seven contestants. To be sure, some noise in the contest is desirable but too much of it is clearly not desirable. This explains why the condition in (9) places upper and lower bounds on σ^2.

The intuition behind the above result also accounts for some results in literature on contests. For example, Amegashie and Kutsoati (2007) apply this reasoning to a third-party's intervention decision in a conflict. In their model, helping a faction in the conflict, which takes the form of subsidizing his cost of effort, increases his valuation (i.e., the valuation effect). This will cause him to increase his effort. But this help also exerts an inequality effect by widening the "playing field" if the stronger faction is helped and narrowing it if the weaker faction is helped. Hence if the weaker faction is helped, the valuation effect and the inequality effect move in the same direction resulting in an increase in the aggregate cost of conflict. So the weaker faction should not be helped if the third-party's goal is to reduce the aggregate cost of the conflict. On the other hand, helping the stronger faction widens the difference in the abilities of the contestants, so the inequality effect will result in a fall in aggregate effort. Of course, the increase in the valuation of the stronger faction will lead to an increase in his effort. Therefore, if the third-party wants to minimize the aggregate cost of the conflict, then he should help the stronger party if the inequality effect dominates the valuation effect.[12] Otherwise, he should not help either faction.

[12] The *inequality* effect and *valuation* effect are the analogues of the *strategic* and *non-strategic* effects discussed above.

Similarly, Baye, Kovenock, and de Vries (1993) found that excluding the most able contestant or a group of top contestants from a contest could result in an increase in aggregate expenditures. Of course, this occurs when the inequality effect of such exclusion dominates the valuation effect.[13] Also, Che and Gale (1998) showed that a cap on bids could lead to an increase in aggregate expenditures because it levels the playing field making more difficult for high-ability contestants to pre-empt the efforts of low-ability contestants.[14]

Szymanski and Valletti (2005) found that in a contest with an outstanding contestant, concentrating the entire prize into a grand single prize for first place may actually lower aggregate efforts, since the other contestants may not exert enough effort because they do not think that the have a decent chance of winning. Splitting the prize into a first prize and a second prize levels the playing field inducing low-ability contestants to exert greater effort which, in turn, forces the outstanding contestant to also increase his effort. Finally, Fu (2006) found that if a contest-designer handicaps a high-ability contestant relative to a low-ability contestant, aggregate efforts increase.

One may argue that placing some weight on popularity may cause the contestants to divert their efforts from singing into non-singing efforts in the competition. In this case, one requires a model where the contestants invest in both singing and non-singing

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[13] This also accounts for the result in Epstein and Nitzan (2006).

[14] Gavious, Moldovanu, and Sela (2002) find that a cap on bids decreases aggregate expenditures, if the contestants have a linear cost of effort. This is in contrast to Che and Gale (1998). The difference stems from the fact that in Che and Gale (1998), the contestants are *ex ante* asymmetric and this is common knowledge. In Gavious et al. (2002), the contestants are *ex ante* symmetric but are asymmetric *ex post* (after independently and privately drawing their types from some continuous distribution). However, Gavious et. al (2002) find that a cap on bids increases aggregate expenditures if the cost of effort is a convex function and the number of contestants is sufficiently large. They find that bid caps lower the bids of high-valuation contestants but increase the bids of middle-valuation contestants. These opposing effects are akin to the valuation effect and inequality effect discussed above.

efforts. Such a contest will be similar to multi-activity contests as in Amegashie (2006), Konrad and Clark (2007), and Arbatskaya and Mialon (2007). To focus on the key driving force behind proposition 1, I do not consider this possible effect.

Indeed, the diversion of efforts from singing to non-singing efforts is not borne out in reality. For example, contestants in *American Idol* focus their energies on improving their singing performance. They understand that they are in singing contest. The fact that viewers care about non-singing factors in addition to singing performance does not imply that the contestants will go out of their way to invest in non-singing activities. This will especially be the case if the contestants are uncertain about the viewers' preferences over non-singing activities. Thus the model in this paper is applicable if the contestants are uncertain about the kind of non-singing factors that the viewers care about. These non-singing attributes could have several components including hairstyle, smile, sense of humor, tone of voice when speaking (as opposed to singing), choice of clothing, etc. Therefore, from the standpoint of the contestants, it is not unreasonable to simply treat the viewers' preferences over non-singing activities, as *noise*. My argument is that viewers' noisy preference for non-singing attributes (i.e., popularity) could paradoxically lead to an increase in aggregate singing efforts.

I have assumed that increasing aggregate efforts is a desirable goal of a contest designer. This is a reasonable goal and has been used by several authors (e.g., Konrad and Gradstein, 1999; Moldovanu and Sela, 2001, 2006; and Moldovanu, Sela, and Shi, 2007; Szymanski and Valletti, 2005). But the contest-designer may also care about the distribution of efforts as well. That is, viewers may care about competitive balance

(Szymanski, 2003). Viewers may prefer a more balanced contest to a lopsided contest even if aggregate effort in the former is lower. If we use the difference in efforts, $x_1^* - x_2^* = \ln(b)$ as the measure of competitive balance then there is no change in competitive balance as the voting weight of the viewers is increased.

Ideally, the contest designers prefer a contestant who is popular on the show and also has a high singing ability. But it appears that if they had to choose between the two, they would rather go for someone with a high singing ability and moderate popularity rather than someone with mediocre singing ability but with high popularity. This is because marketing and promotion agencies in the music industry can boost the popularity of a high-ability singer (after s/he has won the competition) through the choice of clothing, facial make up, appearances on talk shows, etc. It is much harder to improve the singing ability of a mediocre talent. And the popularity of a mediocre singing talent will eventually wane.[15]

3. Conclusion

In this short article, I have argued that while some may perceive the very successful Fox TV reality show, *American Idol*, as turning into a popularity contest instead of the singing contest it is supposed to be, this need not be a problem. On the

[15] One past *American Idol* contestant with mediocre singing ability whose popularity hasn't seemed to have waned is William Hung (http://en.wikipedia.org/wiki/William_Hung). Although, he did not even make it past the audition stage, his popularity soared after his audition was shown on the program. However, in spite of his popularity, it must be noted that he has not won the kind of elite prizes in the music industry like the Grammy awards, multi-platinum selling albums, American Music Awards, Billboard Music Awards, etc. So William Hung's popularity, based on his non-singing abilities, has not won him the elite prizes in the music industry. In contrast, some of the past top four finalists like Carrie Underwood, Chris Daughtry, Clay Aiken, and Kelly Clarkson have won some of these elite prizes. Contestants like William Hung and Sanjaya Malakar, who are popular for reasons other than their singing ability, do not appear to be the type that the organizers of *American Idol* are interested in.

contrary, this could boost incentives by boosting aggregate efforts in singing. If viewers voted based solely on singing performance, low-ability contestants may not strive hard enough because their chances of winning the competition will be very small. This will, in turn, cause high-ability contestants to exert a lower effort than they otherwise would. By not making success in the contest *too sensitive* to effort, low-ability contestants are paradoxically induced to exert a higher singing effort. This, in turn, forces the high-ability contestants to work harder and not be complacent. Hence, the current voting rule in *American Idol* under which only the votes of viewers count when the number of contestants is narrowed to twenty-four may be good for incentives. For the same reasons, giving some weight to the votes of viewers in *Dancing with the Stars* could also be good for incentives.

There may yet be another reason why the current voting rule in *American Idol* may not have perverse effects. Since the votes of viewers only count after the set of contestants has been narrowed to twenty-four by the judges, it is likely that there will not be substantial differences in the abilities of the contestants. However, the judges sometimes get it wrong as the Sanjaya case showed. And to be sure, the judges are not totally certain of a contestant's ability. Indeed, that is what the show is about: to discover talent. But doing so depends on giving the right incentives to elicit sufficient singing efforts from the contestants. Even a high-ability contestant may rest on her laurels or be complacent without the right incentives. Introducing sufficient noise into the contest by giving the viewers sufficient voting power may well be a desirable incentive mechanism.

As noted in section 1, making the votes of viewers count may also be a necessary evil intended to make viewers feel a sense of participation and boost TV ratings of the show. This article has shown that this participation motive may also have other desirable incentive effects.

Finally, as argued in section 1, this paper makes a more general contribution to the design of contests, the allocation of voting rights in committees, and the desirability of low-powered incentive schemes.

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