



A Work vs. Perk Model of Leadership and Organizational Culture

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A Work vs. Perk Model of Leadership and Organizational Culture

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Abstract:

This paper considers the leader's role in forming a culture by choosing the cultural focus and metric when agents have reference-dependent preferences. We find that combining a cultural work metric and external focus maximizes incentives. Principal-leaders favor this type of culture. Under agent-leadership, however, the favored culture critically depends on the relative magnitudes of the agent's borrowing needs and pledgeable income. If agents' borrowing needs slightly exceed the pledgeable income, agent-leaders prefer the incentive-maximizing culture. Yet, if agents' pledgeable income exceeds the borrowing needs, agent-leaders prefer to minimize incentives by emphasizing an external cultural focus and a perk metric.

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Key words: Leadership, organizational culture, corporate culture, reference-dependent utility, gain-loss utility

JEL Codes: D23, D03, M14

1. Introduction

Existing theories of leadership in economics typically assume that leaders can solve incentive and coordination problems, attract like-minded workers, convey necessary information, but cannot affect preferences.¹ Yet, this seems at odds with the importance that leaders and leadership experts assign to shaping an organization's culture. For example, the CEO Jeff Bezos of Amazon explains (see Kantor and Streitfeld (2015)) that his "main job today: I work hard at helping to maintain the culture," which is consistent with Hermalin's (2013) arguments that leaders "disseminate culture within an organization" and that a leader's effectiveness may depend on the "group feeling" within the culture. As Akerlof and Kranton (2005) argue that organizational culture directly affects preferences, this argument would suggest that successful leaders may affect preferences by choosing the organizational culture.² Although leadership is worthy of study in its own right, understanding the effects that leaders can have on preferences should be critically important to economists given the emphasis on preferences in the discipline.

Following the arguments of Hermalin (2013) and Akerlof and Kranton (2005) that leaders influence preferences through culture, we consider the leader's ability to affect preferences by shaping how agents with reference-dependent preferences make referential performance comparisons. In this paper, the leader can shape the referential comparisons within

¹For example, see Bolton, Brunnermeier, Veldkamp (2013), Van den Steen (2005), and Hermalin (1998), respectively. For further examples of how leaders are thought to resolve incentive and coordination problems, see Huck and Rey-Biel (2006) as well as Rotemberg and Saloner (1993, 2000).

²Akerlof and Kranton provide many examples in which culture appears to affect preferences. For example, they discuss how West Point makes cadets more willing to take risks in battle, how soldiers' growing loyalty to one another makes them more willing to break the rules, and how workers at Lincoln Electric so strongly identified with their organization's culture that they were willing to let subjective evaluations determine half of their compensation. Similarly, Swensen (2009) discusses how culture may affect preferences in institutional investment offices. When investment staff identify with the organization, they become willing to accept the lower compensation associated with working for not-for-profit institutions instead of Wall Street. Poorly-designed cultures harm endowment returns as top people depart for more lucrative careers once they have enough experience. As an illustration, he recounts how the Stanford Management Company's inability to identify people buying into the organizational culture and mission led to high staff turnover and depletion of its senior ranks in 2005.

a culture along two dimensions: the culture's comparison focus and the culture's comparison metric. For example, when the culture has what we call an *external focus*, agents may focus on comparisons *external to themselves* and involving their contemporaneous peers.^{3,4} When the culture has what we call an *internal focus*, agents may focus on comparisons involving the agents' own *internally-generated* expectations.⁵

To study the effects of cultural metrics on incentives, we also refer to cultures as either having work metrics or perk metrics as these metrics have different effects on incentives. Cultures emphasizing metrics for which gains and work-related effort are positively correlated are said to be work metrics. In such cultures, an agent would be predicted to experience greater sensations of gain by exerting greater work-related effort. Cultures emphasizing metrics for which gains and work-related effort are negatively correlated are said to employ perk metrics.^{6,7} For example, agents in organizational cultures emphasizing the importance of flex-time may experience smaller gains and greater losses when pushed to exert greater work-related effort.

To formally study how a given culture affects incentives, we start with a standard model of moral hazard from Laffont and Martimort (2002) and add in reference-dependent

³ As agents in cultures with external focuses experience gains when demonstrating superior performance to their peers, we think of such cultures as being more competitive.

⁴ Although this paper considers referential comparisons external to both the agent and the organization, it is important to note that the focus is only necessarily external to the agent and not the organization. Even if agents were to compare their own performance to peers within the organization, we would still say that the cultural focus is external as long as the focus is external to the agent.

⁵ In this paper, cultural focuses will differ because of what Kőszegi and Rabin (2007) refer to as acclimation. Reference points that are more internally-focused will demonstrate higher levels of acclimation, whereas reference points that are more externally-focused will demonstrate lower levels of acclimation.

⁶ A culture emphasizing a perk metric is not necessarily a culture with a high level of perks. Rather, such a culture is one that emphasizes, advertises, and publicizes the importance of perk-taking behavior. For example, an organization providing less vacation time but advertising the importance of vacation-time utilization would be considered as having a stronger perk metric than an organization providing more vacation time but not advertising its importance.

⁷ The model does not require that emphasizing perk and work metrics be mutually exclusive. Yet, as emphasizing work and perk metrics have opposing effects on incentives, it is not clear what benefits accrue from emphasizing both types of metrics.

preferences.⁸ The agent (he) is cash poor and must obtain funding from a principal (she) for his project, in which success depends on the agent's effort level. The agent knows his own effort, whereas the principal only observes the outcome. The principal selects the monetary transfers maximizing her investment's returns, whereas the agent chooses effort maximizing his expected utility given the contract. With reference-dependent preferences, some component of the agent's utility may now include expectations of gain and loss resulting from any deviations from the reference point.

In the moral hazard situation above, the cultural focus and cultural metric critically affect the agent's incentives through the reference point. In cultures emphasizing a work metric, an increase in work-related effort makes the agent more likely to exceed the target and feel a gain, which is good for incentives. We call this effect the likelihood effect. Yet, when the culture demonstrates a focus that is partially internal, the target may also rise and now be harder to beat, making the agent feel worse off. We call this effect the reference point effect, which harms incentives under a work metric. In cultures emphasizing a perk metric, however, these two findings are reversed. In cultures with perk metrics, increases in work-related effort cause the agent to exceed the target, triggering a loss.⁹ Thus, the likelihood effect is now bad for incentives. Of course, if the cultural focus is at least partially internal, the target will also rise, making the agent feel slightly better off. In the case of cultures with perk metrics, the reference effect strengthens incentives.

⁸This paper generally assumes that preferences are loss-neutral instead of loss-averse in order to demonstrate that the paper's findings are derived from the properties of reference points and not loss-aversion. Extensions to the paper's model of culture establish that introducing low levels of loss-aversion will strengthen several of our findings.

⁹The agent could always meet or beat the perk target by putting in zero work-related effort. Zero effort is good for reference-based utility but will result in unfavorable realizations for project net valuation. In our model, zero effort will generally not be optimal because agents care about both project net valuation and reference-based utility.

The above discussion suggests two of this paper's main findings regarding how different cultures affect incentives. Because cultures demonstrating a greater internal focus have greater reference point effects, Proposition 1 shows that an internal focus dilutes work-related incentives in cultures with work metrics but bolsters work-related incentives in cultures with perk metrics. Because the likelihood effect always weakly dominates the reference point effect, Proposition 2 shows that cultures employing work metrics will have incentives that are at least as strong as cultures employing perk metrics. As a corollary, Propositions 1 and 2 imply that combining a work metric with an external focus provides maximal incentives.

The predictions from the first part of the paper regarding the effects of culture on incentives appear consistent with Kantor and Streitfeld's (2015) discussion of Amazon's organizational arrangements. Given that Kantor and Streitfeld describe Amazon as using stack ranking during its review process whereas Microsoft does not, we would describe Amazon as likely emphasizing an external focus as it is more competitive. Also, the sheer quantity of performance measurements for which individuals are accountable suggests that the culture emphasizes the importance of work-related effort.¹⁰ As a result, we would associate Amazon with having a work metric. Amazon also appears to deemphasize perk metrics relative to Google. Kantor and Streitfeld describe Google as providing employees with "gyms, meals, and [other] benefits" that they advertise is "designed to take care of the whole you," whereas Amazon appears to discourage perk-utilization.¹¹ To the extent that Amazon's culture can be characterized as having an external focus and work metric, we would expect cultural incentives

¹⁰ According to Kantor and Streitfeld (2015), teams were often given fifty to sixty pages of performance metrics based on customers' shopping experiences to be ready to explain at the team's weekly or monthly business review.

¹¹ For examples of perk-utilization discouragement, Kantor and Streitfeld (2015) claim that workers at Amazon are said to often pay for their own travel expenses, and are given "frugality" as one of fourteen leadership principles at new-employee orientation.

to be very strong. It is therefore not surprising that workers at Amazon are described as exhibiting high effort as well as high turnover.¹²

The second part of the paper extends the analysis beyond culture to explicitly consider the role of a leader. The leader, either the principal or the agent, may choose all cultural parameters following a costly expenditure of leadership. Under agent-leadership, the relative magnitudes between the organization's pledgeable income and its borrowing needs affect the optimal culture. Our first main finding of leadership establishes that relative pledgeable income considerations exhibit interesting discontinuities with respect to work vs. perk. We show that agent-leaders with relatively abundant pledgeable income may choose to increase informational rent by using leadership to emphasize a perk metric, whereas agent-leaders with relatively less pledgeable income may better solicit funding by using leadership to emphasize a work metric.

Our final application considers the case of distress in which the principal (i.e., the lender) now exercises leadership and chooses the culture prior to contracting. In our second main finding, we show that the principal generally chooses to emphasize an external cultural focus and work metric as these best extract rent. As a result, this paper predicts that non-distressed firms are likely to exhibit greater variation in culture than distressed firms.

The remainder of the paper proceeds as follows. Section 2 reviews the relevant non-leadership literature while Section 3 presents the benchmark model of moral hazard. Section 4 studies the effects of culture on incentives while Section 5 characterizes the optimal culture under agent- and principal-leadership. Finally, Section 6 offers some concluding comments.

¹² Regarding effort, two former employees interviewed reported that they either worked 80+ hours per week or felt that 80+ hours per week was the expectation. Regarding turnover, Kantor and Streitfeld (2015) note that although Amazon would not report its retention rate, the average employee tenure is reported to be one year with only 15% of employees at the firm for five years or more. The average tenure length was also noted to be one the smallest of Fortune 500 companies.

2. Relationship to the Non-Leadership Economic Literature

Our findings represent a contribution to the literature on reference points. Namely, of Kőszegi and Rabin's (2006, 2007) two equilibrium concepts—acclimating reference points and unacclimating reference points—we ask which one is preferred by the principal as well as the agent.¹³ Our findings show that the preferred form of reference points depend critically on whether effort is positively or negatively correlated with gains. To the best of our knowledge, the optimal degree of acclimation has not been explored in the literature.

The literature largely focuses on either acclimating or unacclimating reference points. This choice is made at the outset and is appropriate if the timing is assumed to be exogenous as Kőszegi and Rabin (2007) argue that reference points become more acclimating when agents have greater time to contemplate their choices. Acclimating reference points are used by Eisenhuth (2012) and Herweg, Müller, and Weinschenk (2010). In other situations, agents are faced with unanticipated contingencies requiring immediate actions. In these situations, Kőszegi and Rabin (2007) argue that unacclimating reference points are more relevant. Unacclimating reference points are considered by Carbajal and Ely (2012), Daido and Itoh (2005), Heidhues and Kőszegi (2014), Herweg and Mierendorff (2013), and Macera (2012).

However, in a standard principal-agent problem, such as the one we consider, the principal and agent may have significant control over the timing of production.¹⁴ In this paper, the principal's role as a lender should allow her to structure the financing as a sequence of short-term lending should unacclimating reference points be desired. Her role should also allow her to

¹³Kőszegi and Rabin (2007) refer to an equilibrium that is acclimating as a *choice-acclimating personal equilibrium* (CPE), whereas an equilibrium that is unacclimating is referred to as an *unacclimating personal equilibrium* (UPE).

¹⁴Not all models in the literature focus on a principal-agent problem. For example, Heidhues and Kőszegi (2014) is based on industrial organization while Carbajal and Ely (2012) model screening contracts offered by monopolists.

provide long-term financing should more acclimating reference points be desired. In other principal-agent contexts with endogenous timing, the principal may want to secure more unacclimating reference points by structuring the agents' projects as a sequence of tasks with more immediate deadlines. In contrast, if the cost of such structuring were too high, she might rather structure projects to have more generous deadlines at the potential cost of more acclimating reference points.

Finally, our model of culture is also related to models of social norms. The key advantage of using reference points over social norms is that deviations from reference points are clearly interpreted as gains and losses with clear consequences for utility. In contrast, theories of social norms, such as Huck, Kübler and Weibull (2012) as well as Fischer and Huddart (2008), require additional assumptions to interpret how deviations from the norm affect utility.

3. The Benchmark Model

The benchmark model is based on a standard moral hazard model (Laffont and Martimort 2002). In the model, the organization is represented by a risk-neutral agent (he), who has a project that only he can perform. The project's value depends on whether the project is successful or not. A successful project generates value \bar{V} for the agent while an unsuccessful project only generates value $\underline{V} < \bar{V}$. A successful project therefore results in increased valuation $\Delta V = \bar{V} - \underline{V}$.

The outcome of the project is stochastically determined by the actions of the agent. The agent chooses a work-related effort $e \in \{0,1\}$, with probabilities of success given by π_1 when $e = 1$ and π_0 when $e = 0$. As $\pi_1 > \pi_0$, choosing higher levels of effort increases the likelihood that the project is successful by $\Delta\pi = \pi_1 - \pi_0$ at cost of effort ψ .

Completion of the project also requires an initial investment outlay of amount I . As the agent has no cash on hand, the agent must contract with a principal (she) in order to receive the necessary funding. To receive funding I , the agent must promise repayments to the principal. As the chosen effort remains the private information of the agent, the transfers to the principal can only depend on the project's outcome. Let \bar{R} represent the repayment to the principal when the project is successful and \underline{R} the repayment when the project is not successful.

The principal's utility is captured by the expected net returns on her investment $E[R] - I$, which she will design the financial contract to maximize. Assuming that the project's net surplus $E[V] - I - \psi * e$ is only positive under effort $e = 1$ yields the restriction $I \in [\pi_0 \bar{V} + (1 - \pi_0) \underline{V}, \pi_1 \bar{V} + (1 - \pi_1) \underline{V} - \psi]$. When inducing effort $e = 1$, the principal's objective is to design a contract to maximize:

$$E[R] - I = \underline{R} + \pi_1(\bar{R} - \underline{R}) - I$$

The timing of arrangements is given below:

1. The principal offers a contract with transfers (\bar{R}, \underline{R}) .
2. The agent accepts or rejects the contract. If accepted, the agent receives I from the principal.
3. The agent invests I in the project and chooses work-related effort $e \in \{0,1\}$ with cost of $e = 1$ given by ψ .
4. The project's probability of success is given by π_e with e the chosen level of effort.
5. Repayments $R \in \{\bar{R}, \underline{R}\}$ are paid contingent on the project's realized valuation $V \in \{\bar{V}, \underline{V}\}$.

Given risk-neutrality and normalizing the agent's outside option to zero, the principal must observe the following constraints to induce $e = 1$:

$$(IR_0) \pi_1(\bar{V} - \bar{R}) + (1 - \pi_1)(\underline{V} - \underline{R}) - \psi \geq 0,$$

$$(IC_0) \pi_1(\bar{V} - \bar{R}) + (1 - \pi_1)(\underline{V} - \underline{R}) - \psi \geq \pi_0(\bar{V} - \bar{R}) + (1 - \pi_0)(\underline{V} - \underline{R}).$$

With no other constraints, it is easily verified that the principal can incentivize $e = 1$ while extracting the project's full net surplus $\pi_1 \bar{V} + (1 - \pi_1) \underline{V} - \psi - I > 0$.

The remainder of this paper assumes that the principal faces limited-liability constraints, $\underline{R} \leq \underline{V}$ and $\bar{R} \leq \bar{V}$. With limited liability, the principal must now motivate the agent by providing him rent. The required rent dilutes the principal's expected return, making her less willing to fund the project. Although informational rent will not discourage funding when the agent's borrowing needs are relatively low, it will discourage funding when the agent's borrowing needs are relatively high. We find that the value $\pi_1 \bar{V} + (1 - \pi_1) \underline{V} - \frac{\pi_1}{\Delta\pi} \psi$ acts as a critical cutoff. If I is relatively small with $I < \pi_1 \bar{V} + (1 - \pi_1) \underline{V} - \frac{\pi_1}{\Delta\pi} \psi$, the informational rent caused by limited liability will not discourage the principal from funding the project. If I is relatively high with $I \in \left[\pi_1 \bar{V} + (1 - \pi_1) \underline{V} - \frac{\pi_1}{\Delta\pi} \psi, \pi_1 \bar{V} + (1 - \pi_1) \underline{V} - \psi \right]$, however, the informational rent caused by limited liability will discourage the principal from funding the agent's project.

4. Culture and Incentives

To study culture, this section introduces two types of reference points into the benchmark model: reference points with internal and external focuses. For reference points with external

focuses, we consider the possibility that agents may refer to their peer group's performance when constructing the reference point. The first subsection assesses the effects on incentives when the cultural focus and cultural metrics are publicly and non-strategically chosen by Nature. The following extensions then demonstrate that the section's first two Propositions are generally robust to considerations of loss-aversion and diminishing sensitivity.

The Effects of Culture on Incentives

This section starts with the Kőszegi and Rabin (2006, 2007) framework in which reference points matter because deviations from reference points will trigger feelings of gain and loss. The organization's representative agent chooses effort to maximize expected utility, now including some referential utility component.

In this section, the referential utility component is affected by the cultural metric parameters $\eta_+ \geq 0$ and $\eta_- \geq 0$ as well as the corresponding cultural focus parameters $\alpha_+ \in [0,1]$ and $\alpha_- \in [0,1]$ that are all chosen by Nature. First, the organization's emphases on metrics for which gains are positively and negatively correlated with work-related effort are captured by η_+ and η_- , respectively. If the organization emphasizes work metrics for which work-related effort and gains are positively correlated (e.g., productivity), then the organization is said to emphasize a positive metric. Consequently, $\eta_+ > 0$, in which η_+ denotes the gain-loss coefficient corresponding to this positive work metric. Alternatively, if the organization emphasizes cultural metrics for which work-related effort and gains are negatively correlated (e.g., a perk such as flex-time), then the organization is said to emphasize a negative metric. The culture would also be said to have a stronger perk metric with $\eta_- > 0$, in which η_- denotes the gain-loss coefficient corresponding to this negative perk metric. In the model of this paper, a work metric will cause agents to apply weight η_+ to comparisons involving project valuations, whereas a perk

metric will cause agents to apply weight η_- to comparisons involving the cost of work-related effort.

Second, the organization may foster comparisons that are either internal or external to the agent. The degree to which comparisons involve internal focuses on work and perk metrics are captured by α_+ and α_- , respectively.¹⁵ If both η_+ and η_- are positive and if both $\alpha_+ = 1$ and $\alpha_- = 1$, then the culture would be said to have an internal focus along both metrics. Yet, other cultures may induce agents to focus on reference comparisons external to the agent.¹⁶ If both η_+ and η_- are positive and if both $\alpha_+ = 0$ and $\alpha_- = 0$, then these cultures would be said to have external focuses along both metrics. In the event that only a single η is positive, then the culture only emphasizes a single metric whose degree of internal focus is captured by the corresponding α .¹⁷ If, for example, $\alpha_+ = 0$ and only $\eta_+ > 0$, then we would say that the culture emphasizes a work metric with an external focus.

The timing of the modified arrangements is given below:

1. Nature publicly chooses the four cultural parameters α_+ , α_- , η_+ , and η_- .
2. After both parties observe the values of the cultural parameters, the principal offers a contract with transfers (\bar{R}, \underline{R}) .
3. The agent accepts or rejects the contract. If accepted, the agent receives I from the principal.

¹⁵ In the reference point literature, α_+ and α_- dictate the degree to which the corresponding reference points are said to directly acclimate to the agent's choice of effort.

¹⁶ Under the external reference points considered, the representative agent compares his performance to the average expected performance of all other comparable organizations. For simplicity, it is assumed that all peer organizations incentivize effort $e = 1$.

¹⁷ If neither η is positive, then reference points do not enter the utility function and culture can no longer affect preferences.

4. The agent invests I in the project and chooses effort $e \in \{0,1\}$ with cost of $e = 1$ given by ψ .
5. The project's probability of success is given by π_e with e the level of effort chosen.
6. Repayments $R \in \{\bar{R}, \underline{R}\}$ are paid contingent on the project's realized value $V \in \{\bar{V}, \underline{V}\}$.

The cultural parameters α_+ and α_- will influence the agent's reference points P_+ and P_- , corresponding to the work and perk metrics, respectively. These reference points enter the referential component of the agent's expected utility.¹⁸ Following Kőszegi and Rabin (2006), the reference point P_+ in this paper will coincide with the agent's expected project valuation net of transfers in equilibrium, whereas the reference point P_- will coincide with the agent's expected cost of work-related effort in equilibrium. The agent's reference points will combine both the agent's own internally-generated expectations and the expectation the agent has for externally-generated realizations of his peer group in comparable organizations. For simplicity, we assume that all comparable organizations have cultures incentivizing $e = 1$ and that the probabilities π_1 and $(1 - \pi_1)$ as well as net valuations $(\bar{V} - \bar{R})$ and $(\underline{V} - \underline{R})$ are identical across organizations. As a result, the cultural reference points will be given by:

$$P_+ = \alpha_+ [\pi_e (\bar{V} - \bar{R}) + (1 - \pi_e) (\underline{V} - \underline{R})] + (1 - \alpha_+) [\pi_1 (\bar{V} - \bar{R}) + (1 - \pi_1) (\underline{V} - \underline{R})],$$

$$P_- = -\alpha_- \psi * e - (1 - \alpha_-) \psi,$$

in which $e \in \{0,1\}$ includes all choices of effort available to the agent, even efforts chosen off-the-equilibrium path.

¹⁸The project's expected net valuation constitutes the non-referential component of the agent's expected utility.

Unlike the cultural focus parameters α_+ and α_- , the cultural metric parameters η_+ and η_- affect referential comparisons outside of the reference point. These cultural metric parameters represent the degree to which the culture emphasizes performance according to the corresponding metric. Starting with referential gains and η_+ , when the agent exceeds P_+ he will experience a sense of gain, and this feeling of gain will be increasing in the degree of emphasis η_+ on the work metric. In the context of the agent's project, a gain of size $\eta_+(\bar{V} - \bar{R} - P_+)$ is realized following success.¹⁹ If $e = 1$ is chosen, this gain is realized with probability π_1 . For P_- , referential gains are realized when he chooses work-related effort below his peer group's. As peer organizations are assumed to choose $e = 1$, the agent only experiences a gain when choosing $e = 0$.

The cultural metric parameters also influence referential losses. For P_+ , a loss of size $\eta_+\lambda(\underline{V} - \underline{R} - P_+)$ is realized with probability $(1 - \pi_1)$ following choice $e = 1$, in which $\lambda \geq 1$ captures the agent's degree of loss-aversion. For P_- , the agent only experiences a loss when choosing a higher effort than his peers at comparable organizations. As the peer organizations are assumed to choose $e = 1$, losses associated with the perk metric will not materialize on-the-equilibrium path in our model as there is no cost uncertainty. The rest of this subsection normalizes $\lambda = 1$ in order to demonstrate that the findings of this section depend only on the properties of reference points and do not require loss-aversion.

After observing the four cultural parameters α_+ , α_- , η_+ , and η_- chosen by Nature, the principal will design a contract to maximize the net return on her investment while observing the relevant individual-rationality, incentive-compatibility and limited-liability constraints.

¹⁹ In Köszegi and Rabin (2006, 2007) η_+ and η_- would be referred to as gain-loss coefficients.

Although the original limited-liability constraints $\bar{R} \leq \bar{V}$ and $\underline{R} \leq \underline{V}$ remain, the individual-rationality and incentive-compatibility constraints are affected by referential comparisons and are modified as follows:

$$\begin{aligned}
(IR_1) \quad & U(\bar{R}, \underline{R}, e = 1) \\
& = \pi_1(\bar{V} - \bar{R}) + (1 - \pi_1)(\underline{V} - \underline{R}) - \psi + \eta_+ \pi_1(\bar{V} - \bar{R} - P_+) \\
& + \eta_+(1 - \pi_1)(\underline{V} - \underline{R} - P_+) + \eta_-(-\psi - P_-) \geq 0,
\end{aligned}$$

$$\begin{aligned}
(IC_1) \quad & \pi_1(\bar{V} - \bar{R}) + (1 - \pi_1)(\underline{V} - \underline{R}) - \psi + \eta_+ \pi_1(\bar{V} - \bar{R} - P_+) + \eta_+(1 - \pi_1)(\underline{V} - \underline{R} - P_+) \\
& + \eta_-(-\psi - P^-) \\
& \geq \pi_0(\bar{V} - \bar{R}) + (1 - \pi_0)(\underline{V} - \underline{R}) + \eta_+ \pi_0(\bar{V} - \bar{R} - P_+) \\
& + \eta_+(1 - \pi_0)(\underline{V} - \underline{R} - P_+) + \eta_-(0 - P_-).
\end{aligned}$$

To understand how the four cultural parameters influence incentives, we first hypothetically ask: what kind of reference point would the agent like? If we look at (IR_1) , it is clear that the agent prefers that P_+ and P_- be as low as possible (and preferably negative) because lower reference points trigger larger gains and smaller losses.

Of course, the agent does not have full control over the reference point. Either it is internally-generated and he cannot choose it separately from his work-related effort. Or it is externally-generated and exogenous to him. When the reference point is completely externally-generated, the agent has no control over the reference point and has no incentive to strategically distort his work-related effort. Yet, when the reference point is at least partially internally-generated, the agent will have incentives to distort his work-related effort to lower his reference point. When the culture emphasizes a work metric with $\eta_+ > 0$, agents desiring a lower

reference point are incentivized to distort their *work-related* effort downward to render $P_+ \geq 0$ less positive. For maximal incentives, the associated reference point should be completely externally-generated with $\alpha_+^* = 0$. In contrast, when the culture emphasizes a perk metric with $\eta_- > 0$, agents desiring a lower reference perk are incentivized to distort their *perk-related* effort downward to render P_- more negative. Of course, if perk-related and work-related efforts are substitutes, then efforts no longer associated with perk may now be freely redirected toward work. For maximal incentives, the associated reference point should be fully internally-generated with $\alpha_-^* = 1$.

Proposition 1. For maximal incentives, the culture should emphasize an external focus for the work metric ($\alpha_+^* = 0$) and emphasize an internal focus for the perk metric ($\alpha_-^* = 1$) when the agent's preferences are characterized by loss-neutrality, constant sensitivity, and sufficiently small gain-loss coefficient η_+ .²⁰

Proof. When the limited-liability constraints bind and $\eta_+ \leq \pi_1/\Delta\pi$, the *(IR)* is slack for all $\alpha_+, \alpha_- \in [0,1]$ in the second-best contract and the incentive-compatibility constraint can be written as follows:

$$(IC_2) \quad \pi_1(\bar{V} - \bar{R}) - \psi \geq \pi_0(\bar{V} - \bar{R}) - \eta_+(1 - \alpha_+)[\pi_1 - \pi_0](\bar{V} - \bar{R}) + \eta_-(1 - \alpha_-)\psi.$$

Given the above incentive-compatibility constraint (IC_2), it is clear that decreasing α_+ and increasing α_- loosen (IC_2). Consequently, when $\Delta\pi\eta_+ \leq \pi_1$, $\alpha_-^* = 1$ and $\alpha_+^* = 0$ provide the strongest incentives. ■

²⁰For strict optimality of $\alpha_+^* = 0$ and $\alpha_-^* = 1$, this Proposition requires that $\eta_+ \leq \pi_1/\Delta\pi$ so that the *(IC)* binds in the second-best contract. When $\eta_+ > \pi_1/\Delta\pi$, then the first-best transfers satisfying the limited-liability constraint ($\bar{R} = \bar{V} - \frac{\psi}{\pi_1}, \underline{R} = \underline{V}$) may become incentive-compatible. As a result, $\alpha_+^* = 0$ and $\alpha_-^* = 1$ would only be weakly optimal.

Proposition 1 studies the incentive-maximizing cultural focus for a given metric and concludes that internal focuses bolster incentives when perk metrics are emphasized but dilute incentives when work metrics are emphasized. We now ask: what types of cultural metrics provide the strongest incentives? It is straightforward to show that when reference points are internally-generated with $\alpha_+^* = \alpha_-^* = 1$ and when preferences are loss-neutral, the values of η_+ and η_- do not affect incentives. The agent will experience the standard second-best incentives under loss-neutrality because the agent's choice of effort directly influences both expected performance and reference points to equal degree.

When the cultural focus is completely external with $\alpha_+^* = \alpha_-^* = 0$, however, the emphasis assigned to each cultural metric critically affects incentives. When reference points are less dependent on the agent's effort, the agent desires to choose effort to beat the reference target associated with the cultural metric. If the cultural metric is chosen so that gains and work-related effort are positively correlated, the agent's desire to surpass the reference target will cause him to increase his work-related effort, strengthening incentives. If the cultural metric is chosen so that gains and work-related effort are negatively correlated (e.g., the metric emphasizes perks), however, the agent's desire to surpass the reference perk will cause the agent to decrease his work-related effort, harming incentives. This leads to our second Proposition:

Proposition 2. For maximal incentives, an organization's culture should emphasize work metrics with $\eta_+^* > 0$ but not perk metrics with $\eta_-^* = 0$ when both cultural focuses are

partially external and when the agent's preferences are characterized by loss-neutrality as well as constant sensitivity.^{21, 22}

Proof. Suppose that the cultural focus is partially external for both cultural metrics. Then $\alpha_+ < 1$ and $\alpha_- < 1$. It is easily verified that (IC_2) is strictly loosened when either η_+ is increased or η_- is decreased. The cultural metric parameters η_+^* and η_-^* maximizing incentives are therefore strictly positive and zero, respectively. ■

Proposition 2 implies that when the organization's culture is partially internally focused, the metric chosen critically affects incentives. Furthermore, to maximize incentives the culture should only emphasize work metrics. A corollary immediately following from Propositions 1 and 2 is that combining a work metric with an external focus maximizes incentives:

Corollary 1. If Nature chooses $\eta_- = 0, \eta_+ \geq \frac{\pi_0}{\Delta\pi}, \alpha_+ = 0,$ and $\alpha_- = 0,$ then the transfers associated with the first-best contract $(\bar{R} = \bar{V} - \frac{\psi}{\pi_1}, \underline{R} = \underline{V})$ become incentive-compatible.

That is, Corollary 1 states that to maximize incentives all referential comparisons should be strictly external to the agent and be designed so that referential gains are positively correlated with work-related effort. Alternatively, Corollary 1 states that a sufficiently competitive (i.e., agents compare themselves to their peers) and work-centric culture can render the first-best contract incentive-compatible.

²¹Note that if neither cultural focus were partially external, then (IC_1) would coincide with (IC_0) and cultural metrics would not affect incentives.

²²There is no unique η_+^* from the principal's perspective. It can be shown that if $\eta_- = 0$ and $\eta_+(1 - \alpha_+) \geq \frac{\pi_0}{\Delta\pi}$, then the first-best contract satisfying the limited-liability constraint $(\bar{R} = \bar{V} - \frac{\psi}{\pi_1}, \underline{R} = \underline{V})$ is incentive-compatible. As a result, further increases in η_+ do not strictly benefit the principal.

Extension 1: Loss-Aversion

We now wish to demonstrate that the main findings summarized by Propositions 1 and 2 are robust to considerations of low levels of loss-aversion as well as diminishing sensitivity. The current extension shows that the main insights of Propositions 1 and 2 are generally robust to considerations of loss-aversion. The next extension considers diminishing sensitivity.

We follow Kőszegi and Rabin (2006) and consider a loss-averse individual as having a loss coefficient $\lambda > 1$. If the limited-liability constraint binds when \underline{V} is realized, one obtains the following individuality-rationality and incentive-compatibility constraints:

$$\begin{aligned}
 (IR_3) \quad & \pi_1(\bar{V} - \bar{R}) - \psi - \eta_+(\lambda - 1)\pi_1(1 - \pi_1)(\bar{V} - \bar{R}) \geq 0, \\
 (IC_3) \quad & \pi_1(\bar{V} - \bar{R}) - \psi - \eta_+(\lambda - 1)\pi_1(1 - \pi_1)(\bar{V} - \bar{R}) \\
 & \geq \pi_0(\bar{V} - \bar{R}) + \eta_+(\bar{V} - \bar{R}) \\
 & * [(1 - \alpha_+)(\pi_0 - \pi_1) - (\lambda - 1)(1 - \pi_0)(\alpha_+\pi_0 + (1 - \alpha_+)\pi_1)] + \eta_-(1 \\
 & - \alpha_-)\psi.
 \end{aligned}$$

If η_+ and λ are small enough so that constraint (IC_3) but not (IR_3) binds, two findings emerge from (IC_3) . First, $\alpha_-^* = 1$ will still be incentive-maximizing because the loss coefficient λ does not interact with α_- . Second, $\alpha_+^* = 0$ will still be incentive-maximizing because the derivative of the right-hand side of (IC_3) with respect to α_+ is given by $\eta_+(\bar{V} - \bar{R})(\pi_1 - \pi_0)[1 + (\lambda - 1)(1 - \pi_0)] > 0$. As this derivative is increasing in λ , decreases in α_+ more strongly enhance incentives under loss-aversion. Consequently, incorporating loss-aversion into Proposition 1 yields:

Proposition 3. For maximal incentives, the work metric's focus should be fully external ($\alpha_+^* = 0$) whereas the perk metric's focus should be fully internal ($\alpha_-^* = 1$) when the agent's preferences are characterized by constant sensitivity as well as sufficiently small gain-loss and loss-aversion coefficients η_+ and λ .²³

Proof. It is easily verified that (IC_3) is loosened when either α_+ is decreased or α_- is increased. As a result, the incentive-maximizing cultural focus parameters are given by $\alpha_+^* = 0$ and $\alpha_-^* = 1$. ■

The proof of Proposition 3 shows that the findings from Proposition 1 are robust. Loss-aversion does not alter the cultural focus parameters that strictly maximize incentives as long as the constraint $\pi_0 - \eta_+(\Delta\pi + (\lambda - 1)(1 - \pi_0)\pi_1) \geq 0$ is satisfied. If anything, loss-aversion strengthens Proposition 1 by magnifying the effect that changes in α_+ have on the incentive-compatibility constraint.

Although low levels of loss-aversion do not weaken Proposition 1, loss-aversion will alter the findings of Proposition 2 with regard to the cultural work metric parameter η_+ but not the cultural perk metric parameter η_- , the latter having no interaction with λ . When the culture's internal focus α_+ coincides with its incentive-maximizing level $\alpha_+^* = 0$, emphasizing the work metric will strictly strengthen incentives when the gain-loss and loss-aversion coefficients η_+ and λ are sufficiently small. Yet, when $\alpha_+ \neq 0$, the effect of an increase in η_+ critically depends on the relative variances of the project across effort levels as contained in the expression

²³ The cultural focus parameters $\alpha_+^* = 0$ and $\alpha_-^* = 1$ strictly benefit the principal as long as the constraint $\pi_0 - \eta_+(\Delta\pi + (\lambda - 1)(1 - \pi_0)\pi_1) \geq 0$ is satisfied. When this constraint holds, the loss-averse first-best contract that satisfies the limited-liability constraint and that is given by $\left(\bar{R} = \bar{V} - \frac{\psi}{\pi_1(1-\eta_+(\lambda-1)(1-\pi_1))}, \underline{R} = \underline{V}\right)$ will not be incentive-compatible. Consequently, even at these incentive-maximizing levels of cultural focus parameters, further loosening of the (IC_3) constraint would strictly benefit the principal.

$(\lambda - 1) * [\pi_1(1 - \pi_1) - \pi_0(1 - \pi_0)]$. To see this, first note that differentiation of the left-hand side of (IC_3) with respect to η_+ yields $-(\lambda - 1)\pi_1(1 - \pi_1)(\bar{V} - \bar{R})$, which will be negative; differentiation of the right-hand side of (IC_3) yields $[(1 - \alpha_+)(\pi_0 - \pi_1) - (\lambda - 1)(1 - \pi_0)(\alpha_+\pi_0 + (1 - \alpha_+)\pi_1)](\bar{V} - \bar{R})$.

Two findings emerge from this differentiation at $\alpha_+^* = 0$. First, at $\alpha_+^* = 0$, $\pi_1 > \pi_0$ will imply that the effect an increase in η_+ has on the right-hand side of the original expression is more negative than the effect on the left. As a result, greater emphasis on the work metric η_+ bolsters incentives when $\alpha_+^* = 0$. Second, increases in loss-aversion magnify the effects that increases in η_+ have on the incentive-compatibility constraint because the differences of these two derivatives are increasing in $(\lambda - 1)$. Consequently, an increase in emphasis of the work metric when $\alpha_+^* = 0$ more strongly affects incentives under loss-aversion.

For other values of α_+ such as $\alpha_+ = 1$, however, the effect is ambiguous and critically depends on the polarity of $(\lambda - 1) * [\pi_1(1 - \pi_1) - \pi_0(1 - \pi_0)]$. This difference in variances is important, because binomial distributions cause variance terms to directly enter the utility function of loss-averse agents in the equilibria concepts of Kőszegi and Rabin (2006, 2007). If the desired effort $e = 1$ is associated with greater risk (i.e., variance), then emphasizing the work metric may discourage effort in the presence of a partially internal cultural focus. If the desired effort $e = 1$ is associated with less risk, however, then emphasizing the work metric will encourage effort for sufficiently small values of η_+ and λ . Overall, this discussion is summarized by the following Proposition:

Proposition 4. Under constant sensitivity and low levels of loss-aversion, a culture maximizes incentives by emphasizing a work metric ($\eta_+^* > 0$) but not a perk metric ($\eta_-^* = 0$)

when the work metric's focus parameter coincides with its incentive-maximizing value ($\alpha_+^* = 0$) or when the project variance is negatively correlated with effort, $\pi_0(1 - \pi_0) > \pi_1(1 - \pi_1)$.

Proof. As λ does not interact with η_- , a decrease in the cultural perk metric parameter η_- loosens (IC_3). Thus, $\eta_-^* = 0$ is still optimal for incentives. The introduction of loss-aversion, however, alters the incentive effect of η_+ . An increase in η_+ loosens (IC_3) by amount

$$\{(1 - \alpha_+)(\pi_1 - \pi_0) + (\lambda - 1)(1 - \pi_0)(\alpha_+\pi_0 + (1 - \alpha_+)\pi_1) - (\lambda - 1)\pi_1(1 - \pi_1)\}(\bar{V} - \bar{R}).$$

Note that the above expression is strictly positive when $\alpha_+ = 0$ or when $e = 0$ is associated with greater project risk, $\pi_1(1 - \pi_1) - \pi_0(1 - \pi_0) < 0$. Further, this loosening effect is increasing in λ . ■

Although the findings related to η_- are not affected, the proof of Proposition 4 shows that the introduction of loss-aversion both strengthens and weakens the earlier findings related to η_+ in Proposition 2. On the one hand, the presence of loss-aversion causes emphasizing the work metric to more strongly affect incentives when the cultural focus parameters coincide with their incentive-maximizing levels. On the other hand, the introduction of loss-aversion introduces an interaction between the work metric and the project's variance when $\alpha_+ \neq 0$. If choosing $e = 1$ increases the project's risk, then the introduction of loss-aversion may weaken the incentive effect of an increase in η_+ . As a result, Proposition 4 states that the earlier finding of $\eta_+^* > 0$ from Proposition 2 is only guaranteed to still hold under loss-aversion when the cultural focus parameter α_+ coincides with its incentive-maximizing value or when $\pi_0(1 - \pi_0) > \pi_1(1 - \pi_1)$.

Extension 2: Diminishing Sensitivity

This section's final extension provides evidence that our findings may be robust to considerations of diminishing sensitivity. Diminishing sensitivity implies that an increase in

gain or loss near the reference point has greater impact than increases that are further away. Diminishing sensitivity therefore implies that the marginal effect on utility of the first dollar of loss exceeds that of the hundredth dollar lost. To capture diminishing sensitivity, we follow Kőszegi and Rabin (2006). For example, when the agent experiences a gain or loss of magnitude, $(-\psi - P^-)$, this gain or loss will enter his utility function with magnitude $\mu(-\psi - P^-)$, in which $\mu(\cdot)$ captures the new referential-utility function. Kőszegi and Rabin (2006) assume $\mu(\cdot)$ is concave for positive arguments and convex for negative ones.

This extension will specifically focus on preliminarily assessing whether the findings summarized by Proposition 1 are likely to be robust to considerations of diminishing sensitivity.²⁴ That is, we will try to show that changes in the cultural focus parameters α_+ and α_- have qualitatively the same effect under diminishing sensitivity as found under constant sensitivity. In the absence of a particular functional form for $\mu(\cdot)$, it will be more tractable to abstract away complications arising from uncertainty and loss-aversion. As a result, we consider only cultural focus parameter α_- because it does not interact with loss-aversion and uncertainty in this model. If one lets $\eta_+ = 0$ and replaces $\eta_-(1 - \alpha_-)\psi$ with $\mu((1 - \alpha_-)\psi)$, then (IR_3) and (IC_3) can be written as follows:

$$(IR_4) \pi_1(\bar{V} - \bar{R}) - \psi \geq 0,$$

$$(IC_4) \pi_1(\bar{V} - \bar{R}) - \psi \geq \pi_0(\bar{V} - \bar{R}) + \mu((1 - \alpha_-)\psi).$$

As $\mu'(\cdot) > 0$, $\mu(\cdot)$ represents a monotonic transformation. As a result, increases in α_- still loosen the incentive-compatibility constraint. This leads to the following Proposition:

²⁴ As η_+ and η_- no longer enter the agent's utility function, it is not clear how the findings relating to Proposition 2 would be affected by diminishing sensitivity as modeled by Kőszegi and Rabin (2006).

Proposition 5. For maximal incentives, the cultural focus should be fully internal for the perk metric with $\alpha_-^* = 1$ even when preferences are characterized by diminishing sensitivity.

Proof. First note that the first-best contract satisfying the limited-liability constraint $(\bar{R} = \bar{V} - \frac{\psi}{\pi_1}, \underline{R} = \underline{V})$ that is also individually rational does not satisfy the incentive-compatibility constraint for any $\alpha_- \in [0,1]$. Consequently, the incentive-compatibility constraint binds in the second-best contract. As increases in α_- loosen the incentive-compatibility constraint, a fully internal focus will maximize the agent's incentives. ■

Proposition 5 provides preliminary evidence that the findings in Proposition 1 may be robust to considerations of diminishing sensitivity. Although it abstracts away from complications of uncertainty and loss-aversion by restricting consideration to α_- , the finding that $\alpha_-^* = 1$ continues to hold.

5. The Leader's Strategic Choice of Culture

This section concludes this paper's study of leadership and culture by considering the leader's role in endogenously constructing the culture. Under agent-leadership (principal-leadership), the agent (principal) serves as the leader and may choose all cultural parameters following a costly expenditure of leadership effort. This section's consideration of leadership leads to two general findings. First, organizational culture exhibits discontinuities with respect to borrowing needs under agent-leadership as the chosen culture critically depends on whether or not the organization's borrowing needs exceeds its pledgeable income (i.e., whether I exceeds $\pi_1 \bar{V} + (1 - \pi_1) \underline{V} - \frac{\pi_1}{\Delta\pi} \psi$). Alternatively, the organization's chosen culture critically depends on whether the net pledgeable income or pledgeable income net of borrowing needs, $\pi_1 \bar{V} +$

$(1 - \pi_1)\underline{V} - \frac{\pi_1}{\Delta\pi}\psi - I$, is positive or negative. Second, we consider the case of distress, in which we assume that the lender (i.e., the principal) can exert principal-leadership. As our second general finding, we show that the optimal culture is less sensitive to considerations of net pledgeable income under principal-leadership. This finding suggests that non-distressed firms exhibit more varied cultures than distressed firms.

Constructing the culture will require a costly exertion of effort $\gamma > 0$ from the leader. If the non-monetary cost of effort γ is not met, then all cultural parameters of the preceding section remain zero. For the first finding on leadership, the borrower or agent may pay the non-monetary cost $\gamma > 0$ to choose the organization's culture prior to contracting. For the second finding on leadership, the principal may pay γ to shape the distressed organization's culture. Once γ is paid, the leader may set the cultural metric and focus parameters at his or her discretion. The revised timeline of arrangements is as follows:

1. The agent or the principal (in the case of distress) may choose to exert γ . If this leader pays the non-monetary fixed cost γ , he or she may choose all the cultural parameters. If γ is not paid, all four cultural parameters α_+ , α_- , η_+ , and η_- remain at 0. The choice of cultural parameters is observable but non-verifiable.
2. After both parties observe the values of the cultural parameters, the principal offers a contract with transfers (\bar{R}, \underline{R}) .
3. The agent accepts or rejects the contract. If accepted, the agent receives I from the principal.
4. The agent invests I in the project and chooses effort $e \in \{0,1\}$ with cost of $e = 1$ given by ψ .

5. The project's probability of success is given by π_e with e the level of effort chosen.
6. Repayments $R \in \{\bar{R}, \underline{R}\}$ are paid contingent on the project's realized value $V \in \{\bar{V}, \underline{V}\}$.

Under agent-leadership, the agent's choice of culture critically depends on the agent's net pledgeable income, $\pi_1 \bar{V} + (1 - \pi_1) \underline{V} - \frac{\pi_1}{\Delta\pi} \psi - I$. In fact, organizations with positive and negative net pledgeable income are likely to both exhibit cultures with external focuses but emphasize different types of metrics. Organizations with positive net pledgeable income are more likely to choose perk metrics in order to try to claw back rent, whereas organizations with negative net pledgeable income are more likely to choose work metrics and relinquish rent in order to better solicit funding.²⁵ The effect that the agent-leader's net pledgeable income has on culture is summarized by the following Proposition:

Proposition 6. As $\gamma \rightarrow 0$, agents with positive net pledgeable income will choose $\eta_- > 0$ and $\alpha_- = \eta_+ = 0$. As $\gamma \rightarrow 0$, agents with negative net pledgeable income will choose $\eta_+ > 0$ and $\alpha_+ = \eta_- = 0$.²⁶

Proof. Consider the second-best contract from the benchmark model of Section 3. Limited liability affords the agent informational rent, restricting the agent's pledgeable income to $\pi_1 \bar{V} + (1 - \pi_1) \underline{V} - \frac{\pi_1}{\Delta\pi} \psi$ in the absence of culture. This proof will consider each of the two cases one at a time. Starting with $\pi_1 \bar{V} + (1 - \pi_1) \underline{V} - \frac{\pi_1}{\Delta\pi} \psi - I > 0$, the principal will contract with the agent but extract all pledgeable income. In this case, the agent should use culture to increase his informational rent. As leadership costs $\gamma \rightarrow 0$, Propositions 1 and 2 would suggest

²⁵This section continues to assume that $\pi_1 \bar{V} + (1 - \pi_1) \underline{V} - \psi - I > 0$. If $\pi_1 \bar{V} + (1 - \pi_1) \underline{V} - \psi - I < 0$, then the project's expected net value would be negative regardless of chosen culture. Consequently, the project would never be implemented, and the leader would never exercise leadership for $\gamma > 0$.

²⁶An agent with exactly zero net pledgeable income will not pay γ in order to establish a culture. Should he tighten the incentive-compatibility constraint, this would cut off funding from the principal. Should he loosen the incentive-compatibility constraint, this would only help the principal extract rent unnecessarily.

that he should tighten (IC_2) by increasing the cultural perk metric parameter η_- while keeping the cultural focus parameter $\alpha_- = 0$.

Second, suppose that before the culture's formation, the agent's net pledgeable income is negative. In the absence of leadership, the principal will be unwilling to contract with the agent. In order to obtain funding, the agent will need to increase his pledgeable income by reducing his informational rent. As leadership costs $\gamma \rightarrow 0$, Propositions 1 and 2 would suggest that he should loosen (IC_2) by increasing the cultural work metric parameter η_+ while keeping the external focus parameter $\alpha_+ = 0$. ■

The findings from Proposition 6 are unusual because of the discontinuity when net pledgeable income is zero. If $\pi_1 \bar{V} + (1 - \pi_1) \underline{V} - \frac{\pi_1}{\Delta\pi} \psi - I > 0$, the agent-leader's optimal culture exhibits a perk metric with an external focus to extract rent. If $\pi_1 \bar{V} + (1 - \pi_1) \underline{V} - \frac{\pi_1}{\Delta\pi} \psi - I < 0$, the agent-leader's optimal culture exhibits a work metric with an external focus to secure funding. If $\pi_1 \bar{V} + (1 - \pi_1) \underline{V} - \frac{\pi_1}{\Delta\pi} \psi - I = 0$, the agent-leader never chooses to exert costly leadership effort.

The final application of this section considers the case of a distressed firm in which the principal-leader may now determine the culture by satisfying the leadership effort cost $\gamma > 0$. As she is motivated to extract rent, she will choose cultural parameters that loosen the incentive-compatibility constraint. Consequently, distressed firms would be expected to exhibit less variation in culture as Propositions 1 and 2 imply that the principal would always favor a work metric with an external focus so that $\eta_+ > 0$ and $\alpha_+ = \eta_- = 0$. Moreover, as her goal is to choose culture to extract all of the agent's informational rent, she will choose to emphasize work metrics η_+ more strongly than the agent. This leads to the following Proposition:

Proposition 7. When the lender can influence the culture in the case of distress, the principal-leader will choose to emphasize a cultural work metric with an external focus ($\alpha_+^* = 0$) as the cost of leadership $\gamma \rightarrow 0$.

Proof. Consider the second-best contract from the benchmark model of Section 3. Also, recall Section 3's assumption that $\pi_1 \bar{V} + (1 - \pi_1) \underline{V} - I > 0$. In this case, the principal can set the work metric parameter $\eta_+ \geq \pi_0 / \Delta\pi$ so that the first-best contract $(\underline{R} = \underline{V}, \bar{R} = \bar{V} - \frac{\psi}{\pi_1})$ becomes incentive-compatible when $\eta_- = \alpha_+ = 0$. As the cost of leadership $\gamma \rightarrow 0$, the principal will find it worthwhile to extract the agent's informational rent. ■

Overall, this section first suggests that the cultures of non-distressed firms are varied and critically depend on the organization's net pledgeable income. Firms with larger borrowing needs or less pledgeable income are likely to emphasize work metrics. Firms with smaller borrowing needs or more pledgeable income are likely to emphasize perk metrics. In contrast, this section then establishes that non-distressed firms likely have less variation in culture because their optimal cultures are less sensitive to considerations of net pledgeable income. As long as $\pi_1 \bar{V} + (1 - \pi_1) \underline{V} - I - \gamma > 0$, principal-leaders should always construct a culture emphasizing a work metric with an external focus.

Concluding Remarks

This article contributes to the literature on leadership by using reference-dependent preferences to study how leaders can design organizational culture to influence preferences. This paper emphasizes the importance of designing the appropriate culture and shows that leaders can design culture to relax incentive constraints. Although it may be less surprising that a culture emphasizing a work metric with an external focus provides the strongest incentives, the degree to

which culture affects incentives is surprising. If the leader designs a culture to emphasize work-related metrics strongly enough, he or she may be able to eliminate all informational rent. This paper then explains that different organizations' cultures likely result from differences in leadership incentives. For example, we show that the chosen culture critically depends on the identity of the leader (agent vs. principal), the organization's pledgeable income, and the organization's borrowing needs.

This paper also contributes to the literature on reference points by endogenizing the type of reference point, which contrasts with the rest of the literature. In the literature on reference points, modelers generally choose to analyze a phenomenon using either choice-acclimating personal equilibrium (CPE) or unacclimating personal equilibrium (UPE). Authors can justify their assumption by assuming a particular exogenous timing. If there is a significant delay between intention and action, Kőszegi and Rabin (2007) argue that the reference point will likely be more acclimating, and CPE would be more appropriate. If the agent faced an immediate choice that was unanticipated, the reference point will not have time to adjust, which is consistent with unacclimating reference points in an unacclimating personal equilibrium (UPE). In situations with strategic interaction, however, an assumption of exogenous timing may be problematic if one party has significant influence over the timing associated with the contract. In a principal-agent framework, the principal may ask the agent to expedite the project if unacclimating reference points are more favorable. Alternatively, she may choose to either delay or expand the duration of the project if acclimating reference points are more favorable.

These arguments imply that the principal should use her control over the contracting relationship to secure favorable equilibrium concepts. If agents make comparisons based on

negative (or perk) metrics, CPE are favored, whereas if agents make comparisons based on positive (or work) metrics, UPE are favored.

The approach of this paper has two primary limitations. First, if the timing is outside of the principal's control and no other instruments exist to influence the reference point, either CPE or UPE may still be possible. Second, the majority of this paper focuses on loss-neutral agents. This has the advantage of demonstrating that the main results do not require loss-aversion. Yet, when loss-aversion is introduced, multiple UPE may still be possible. Choosing among the UPE becomes difficult. Although Kőszegi and Rabin (2006) propose the refinement of *preferred personal equilibrium* (PPE)--in which the agent chooses the reference point that maximizes utility--this refinement assumes that agents have a large degree of control over their own reference points instead of principals. In models similar to the models in this paper, loss-aversion with low levels of acclimation may cause peer effects to manifest and prevent the principal from obtaining the reference point that is optimal for her. If the peer group chooses high levels of effort, loss-aversion may reduce the cost of incentivizing $e = 1$. In contrast, if all other agents choose low levels of effort, loss-aversion may make it too costly for the principal to incentivize $e = 1$.²⁷

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²⁷Of course, $e = 0$ is precluded from serving as an equilibrium level of effort in a more representative agent and general equilibrium version of this paper's model because of the assumption that $\pi_0\bar{V} + (1 - \pi_0)\underline{V} - I < 0$.

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