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## Organizational Culture and Performance<sup>†</sup>

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Organizations are all around us: not just firms, hospitals, schools, and government agencies, but also communities, unions, social movements, and more.<sup>1</sup>

Culture is trickier to define, as well as to analyze. As Raymond Williams (1983, p. 87) remarked, “culture is one of the two or three most complicated words in the English language.” In addition, a “historical overview of the shifting meanings of the word ... estimated that there were more than 160 definitions in use” (Steinmetz 1999, p. 5).

For decades, economics largely ignored culture, but things are starting to change.<sup>2</sup>

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<sup>1</sup> Gibbons and Roberts (forthcoming) sketch historical, contemporary, and prospective economic analyses of such organizations. In fact, construing an organization to be something that can be organized, they also include as “organizations” governance structures such as some hand-in-glove supply relationships, joint ventures, and alliances between firms, as well as some regulatory relationships and public-private partnerships between a government and a firm.

<sup>2</sup> DiMaggio (1994, p. 29) computed that in ECONLIT the keyword “culture” appeared in 0.17 percent of references during 1981–1987 and 0.38 percent during 1988–1992. We

For example, some economists have begun to assess the effect of culture on economic activities. Much of this work has used conceptions of culture such as the “customary beliefs and values that ethnic, religious, and social groups transmit fairly unchanged from generation to generation.”<sup>3</sup>

We focus on *organizational* culture, which Schein (1985, p. 9) defines as:

*a pattern of basic assumptions—invented, discovered, or developed by a given group as it learns to cope with its problems of external adaptation and internal integration—that has worked well enough to be considered ... the correct way to perceive, think, and feel in relation to those problems.*

We see organizational culture as partly a *result* of economic activity, not just a determinant of it. In particular, we are interested in both the effect of management on organizational culture and the effect of organizational culture on performance.

To put our focus on organizational culture and performance in context, we briefly review neighboring research. First, there is a growing literature on how large-scale and slow-moving aspects of culture can affect correspondingly large-scale and slow-moving economic activities, such as patterns of international trade or the determinants of and behaviors within political and legal institutions.<sup>4</sup>

Second, turning to economic activity inside organizations, there is much research (largely outside economics) on whether a preexisting, external culture may seep into an organization

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computed that these figures are 1.12 percent for 1993–2000 and 1.83 percent for 2001–2013.

<sup>3</sup> Guiso, Sapienza, and Zingales (2006, p. 23).

<sup>4</sup> For example, Guiso, Sapienza, and Zingales (2009) and Tabellini (2010).

from outside. Hofstede (1980) is a classic example, analyzing differences in IBM's 39 international marketing and service departments in terms of four dimensions of national cultures.<sup>5</sup>

We complement this second research stream by asking whether organizational culture can be developed and managed internally, in addition to national culture seeping in from outside. In short, here and in related work, we explore the opening paragraph of Schein's (1985, p. ix) seminal work on culture and leadership:

*The purpose of this book is, first of all, to clarify the concept of "organizational culture" and, second, to show how the problems of organizational leadership and organizational culture are basically intertwined. I hope to demonstrate that organizational culture helps to explain many organizational phenomena, that culture can aid or hinder organizational effectiveness, and that leadership is the fundamental process by which organizational cultures are formed and changed.*

In the remainder of this essay we proceed in two steps. First, we describe an intervention that dramatically improved organizational performance. This intervention conspicuously included a culture-change component, so we use it to illustrate empirical analyses that could be conducted in similar settings. Second, assuming persuasive evidence on the effect of organizational culture on performance, we discuss related theoretical issues.

### **I. Organizational Culture and Performance in Health Care (and Beyond)**

In this section we describe (i) the setting, method, and outcomes of an intervention that worked and (ii) ways one might analyze the association between organizational culture and performance in these and similar data.

<sup>5</sup>Bloom, Sadun, and Van Reenen (2012) are a recent example from economics, finding that, in a sample of multinationals, a plant in a different country than the headquarters enjoys greater decentralization (e.g., the plant manager has a larger discretionary spending limit) when the trust score between the headquarters country and the plant country is higher.

### **A. An Intervention that Worked<sup>6</sup>**

Until recently, central line-associated blood stream infections (CLABSIs) were an all-too-common event in intensive care units (ICUs). In the late 1990s, a team at Johns Hopkins developed an intervention that essentially eliminated CLABSIs in a surgical ICU. In the early 2000s, the intervention was tested in over 100 ICUs in Michigan, where it reduced median quarterly CLABSI rates (per 1,000 catheter days) from 2.7 at baseline to 0. Recently, in a nationwide collaborative involving more than 1,800 hospital units, CLABSI rates fell by 41 percent, and the intervention saved an estimated 290–605 lives and \$36–40 million in averted costs.

For purposes of illustrating organizational issues, we focus on just two components of the intervention: (i) a checklist consisting of five evidence-based practices to reduce CLABSIs (e.g., washing hands, draping the patient, cleaning the skin with an appropriate antiseptic) and (ii) a Comprehensive Unit-Based Safety Program (CUSP) designed to improve safety culture in the ICU. CUSP included several steps: assessing culture, educating staff on the science of safety, using staff to identify local safety concerns, partnering with senior executives to mobilize resources and demonstrate commitment, learning from defects, implementing teamwork tools for improvement, and reassessing culture.

While the checklist was widely discussed and celebrated, the "mistake of the 'simple checklist' story is in the assumption that a technical solution (checklists) can solve an adaptive (socio-cultural) problem." Instead, the "checklists were ... just one component of a more comprehensive programme to alter the culture of the ICUs, which included, among other things, empowering nurses to stop procedures if guidelines were not followed." (Bosk et al. 2009, pp. 444–445)

Such empowerment required a fundamental change in organizational culture. As Pronovost and Vohr (2010, p. 49) report: "nobody debated the evidence, nobody challenged the items on the checklist, and nobody questioned whether we should do them. But everyone objected to the change in culture."

<sup>6</sup>See Berenholtz et al. (2004), Pronovost et al. (2006), and Agency for Healthcare Research and Quality (2013).

### B. Potential Empirical Analyses

Previous studies have found a cross-sectional relationship between organizational culture and outcomes.<sup>7</sup> Of course, such studies cannot control for fixed, unmeasured organizational attributes that might be correlated with both culture and outcomes.

ICUs in the Michigan project collected monthly data on CLABSIs, and they administered the Safety Attitudes Questionnaire (SAQ) at the beginning and end of the intervention. The SAQ assesses agreement with 65 statements such as “I am frequently unable to express disagreement with staff physicians/intensivists in this ICU” (Item 41) and “Hospital administration supports my daily efforts” (Item 10).<sup>8</sup>

Data like those from Michigan allow a fixed-effects analysis of the following model:

$$(1) \quad Y_{it} = \theta_i + \kappa_t + \beta \times c_{it} + \mathbf{X}_{it} \times \delta,$$

where  $Y_{it}$  is an organizational outcome,  $\theta_i$  and  $\kappa_t$  are organization and year dummies,  $c_{it}$  is a measure of organizational culture, and  $\mathbf{X}_{it}$  is a vector of covariates. In the Michigan setting, such a regression asks: within an ICU, is the change in a measure derived from the SAQ associated with the change in CLABSIs?

Slightly enriching this basic analysis, one might study whether changes in multiple measures from the SAQ are simultaneously associated with changes in CLABSIs. That is, is there a single, underlying notion of organizational culture, with different measures offering different approximations to this underlying notion, or are there multiple dimensions of culture, each with an independent effect on outcomes?

Another approach would allow interactions, not just main effects. For example, there may be heterogeneous treatment effects, and these might relate to initial conditions such as scores on SAQ measures.

Finally, culture does not determine productivity—actions do. Adding controls for the right actions should thus reduce or even eliminate any measured effect of culture on outcomes. For example, in the Michigan project, suppose

data were also collected on compliance with the checklist. It would be interesting to know whether changes in culture or in compliance are more closely associated with change in outcomes.

### II. Avenues for Theoretical Work?

Of course, persuasive evidence about the effect of organizational culture on performance would raise further questions. For example, (i) can organizational culture be changed, (ii) can it be copied, and (iii) why don't lagging organizations copy the cultures of successful competitors?

Recent economic models of these issues relate to the *psychological contract* between an individual and an organization—an idea first described in Schein's (1965, p. 11) inaugural text on organizational psychology:

*... the individual has a variety of expectations of the organization and ... the organization has a variety of expectations of him. ... Expectations such as these are not written into any formal agreement between employee and organization, yet they operate powerfully as determinants of behavior.*

In perhaps the first discussion of such issues within economics, Leibenstein (1982) suggested that productivity within a firm might be determined by the “effort convention” that the firm and its workers adopt. Kreps (1990, 1996) then provided (i) more explicit connection to organizational culture, (ii) illustrative repeated-game models, and (iii) descriptions of holes in the theory that needed to be filled. More recently, Gibbons and Henderson (2013) interpreted several concrete management practices as relying on such “relational contracts” and summarized the theoretical literature to date.<sup>9</sup>

Gibbons and Henderson emphasized that relational contracts often face not only credibility problems (should you believe the promise being made?) but also clarity problems (do you understand the promise being made?). As an example

<sup>7</sup>For example, see Hartnell, Ou, and Kinicki (2011) for a meta-analysis.

<sup>8</sup><https://med.uth.edu/chqs/surveys/safety-attitudes-and-safety-climate-questionnaire/>.

<sup>9</sup>Informally, a relational contract is a shared understanding of the parties' roles in and rewards from collaboration—an understanding so rooted in the details of the parties' relationship that it cannot be enforced by a court.

of the clarity problem, ask yourself (depending on your seniority) either (i) can you articulate your department's tenure policy or (ii) would you understand it if someone articulated it to you?

This distinction between credibility and clarity relates to DiMaggio's (1994, pp. 27–28) discussion of the “regulative” versus the “constitutive” aspects of culture. The regulative aspects include norms, values, and conventions that reshape an individual's pursuit of self-interest—aspects that might be modeled, at least in reduced form, as shaping an individual's payoff  $U_i(a, s)$  received when action  $a$  is taken in state  $s$ . In contrast, the constitutive aspects include taken-for-granted cognitive categories and schema necessary for parties to think and interact—aspects that might be modeled as shaping an individual's perception of the state  $s$  or understanding of the intended action in that state  $a(s)$ .<sup>10</sup>

The Michigan project as a whole (and some of the SAQ items in particular) allow this kind of theorizing to be cast in fairly concrete terms. For example, improvement in Item 41 from the SAQ (“I am frequently unable to express disagreement with staff physicians/intensivists in this ICU”) could relate to both regulative and constitutive aspects of culture—regulative by changing the value of an action (expressing disagreement) and constitutive by helping nurses and doctors reach shared understanding of a state (a scenario when such expression is valuable).<sup>11</sup>

In fact, Item 41 seems almost concrete enough to guide managerial action. How leaders act to change organizational culture (and how economists model this) may depend on whether they focus on the regulative or the constitutive aspects. We believe that important theoretical contributions may arise from taking the clarity problem and the constitutive aspects of culture seriously. Combined with the empirical agenda sketched above, we see important work for economists to do on organizational culture and performance.

<sup>10</sup> See DiMaggio (1997) for a path-breaking review of further possible roles for cognitive psychology in the study of culture.

<sup>11</sup> Item 41 also evokes the concept of “psychological safety”—roughly, a “shared belief ... that the team is safe for interpersonal risk-taking.” See Edmondson and Lei (2014) for a survey.

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