

Exploring Opportunities in Cultural Diversity¹

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Abstract

In economics and political science, there is evidence from large cross-sectional datasets and field experiments that neighborhoods, villages, cities, and countries with higher levels of cultural diversity have lower levels of generalized trust, lower quality of public goods, and poorer economic performance. However, in social psychology, organizational behavior, and computer science, there is evidence that diverse populations are collectively better able to solve complex problems with creative solutions. The next generation of research, crucial for the globalized world that is undermining homogeneous communities, will utilize experimental research designs (such as those based on natural or quasi-natural experiments, laboratory experiments, and randomized experiments in controlled natural settings) to better understand the mechanisms sustaining underperformance of diverse communities and to identify interventions that enable community members to take advantage of the problem-solving promise of diversity to yield social and economic benefits.

INTRODUCTION

Ethnic and cultural diversity imposes a paradox on society. On the one hand, it is costly. When neighborhoods, villages, cities, and countries are comprised of individuals with different beliefs and backgrounds, they tend to fractionalize and fight along those differences. At the same time, diversity in beliefs and backgrounds is often *functional*, such that the very same heterogeneities that generate conflict can also produce large gains in economic productivity and improve performance in intellectual tasks such as problem solving, innovation generation, and decision making. As Alberto Alesina and Eliana La Ferrara point out, “New York and Los Angeles are among the two most troubled American cities in terms of racial relations ... [but] they are constant producers of innovation in the arts and business” (2005, p. 762).

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The next generation of social science research—partly motivated by theory and partly motivated by its practical implications in a world of increasing economic integration and cultural mixing—will likely clarify several puzzles about diversity's trade-offs. If diversity imposes both costs and benefits, what is the net impact of diversity on the probability of social peace, the production of public goods, and economic growth? What kinds of interventions and diversity management strategies can help multicultural groups and societies minimize the costs and realize the benefits of heterogeneity?

Part of the reason these questions are currently difficult to answer is because we know little about the benefits of diversity. This is even the case concerning diversity of factor endowments and the benefits to international trade at the country level. Although theoretically demonstrated by David Ricardo in 1817 (Ricardo 1817/1951) and repeatedly elaborated, refined, and tested, a recent literature review by Nobelist Paul Samuelson (2001) reveals many unanswered questions on whether those gains are actually realized in the real world. No surprise that this is even more so concerning the gains from within-country diversity. To be sure, theoretical and experimental research on the productivity-enhancing effects of diversity illustrate that groups composed of more dissimilar people are more creative, better decision makers, and superior problem solvers (e.g., Hoffman & Maier, 1961; Hong & Page, 2004). But there are very few large-N studies that have convincingly identified such gains from diversity. Results from the experimental literature might still appear generalizable if they were particularly strong, but results are often contradictory and fail to replicate across studies (Williams & O'Reilly, 1998). Perhaps more problematically, the literatures on the costs and benefits of diversity have developed largely in isolation of each other. Although in social psychology, organizational behavior, and computer science there is a strong recognition that diversity is immensely valuable for the prosperity and durability of societies (Page, 2007/2011), in political science and economics diversity is often characterized as exclusively costly, thought to lead to a range of socially undesirable outcomes such as enhanced likelihood of civil conflict (Horowitz, 1985), the underprovision of public goods (Alesina, Baqir, & Easterly, 1999), economic underdevelopment (Easterly & Levine, 1997), social distrust (Putnam, 2007) and democratic instability (Rabushka & Shepsle, 1972). Such disciplinary divides have created narrow theories of diversity that have not been fully useful for assessing the net value of diversity and identifying viable strategies for not only minimizing the costs of diversity but also realizing its benefits.

A new generation of researchers can draw on insights and innovative research methods from multiple disciplines to reevaluate the case for diversity and develop a research program that has the potential to estimate the

magnitude of diversity's productivity-enhancing effects, identify the conditions under which they are best realized, and assess interventions designed to manage both the costs and benefits of diversity. In the subsequent sections we describe foundational and cutting-edge research on this topic. We also discuss opportunities for impactful research and conclude with thoughts on the practical importance of addressing puzzles about diversity's trade-offs.

FOUNDATIONAL RESEARCH

THE BENEFITS OF DIVERSITY

In social psychology, organizational behavior, computer science, and economics, there is an increasing awareness that cultural diversity can be beneficial for the well-being of communities and societies. Because cultural diversity is often correlated with diversity in perspectives, skills, and cognitive abilities, it is hypothesized that diversity generates large efficiency gains in productivity and improves performance in intellectual tasks such as problem solving, knowledge creation, prediction generation, and decision making (see Page, 2007 for a review). Commonly referred to as the "value in diversity" hypotheses, this line of thought isolates (at least) two mechanisms by which diversity improves group productivity: (i) by producing a variety of perspectives and skills useful for problem solving and task completion, and (ii) by creating the type of task-related conflict that leads to a more complete consideration of the issues at hand (Hoffman & Maier, 1961; Nemeth, 1986; O'Reilly, Williams, & Barsade, 1997).

These ideas are founded on early social psychology experiments that generally involved a group of subjects solving problems or completing tasks in the laboratory under various treatment conditions. Hoffman's (1959) and Hoffman and Maier's (1961) experiments revealed that groups whose members had more dissimilar personalities and backgrounds produced "higher quality solutions" to difficult problems under laboratory conditions. Triandis, Hall, and Ewen's (1965) and Kent and McGrath's (1969) experimental studies demonstrated that group heterogeneity (in attitudes and gender) fosters creativity. The experimental literature has been active since these pioneering efforts, introducing new group treatment designs and often moving out of the laboratory and into the field.

Many experiments identify productivity gains from diversity. Nemeth (1986) finds that minority viewpoints improve group performance in several different types of intellectual tasks, including problem solving and decision making. McLeod, Lobel, and Cox (1996) provide evidence that ethnic diversity improves creativity in a brainstorming task. Priem, Harrison, and Muir (1995) show that cognitive conflicts lead to better group decisions. Watson,

Kumar, and Michaelsen (1993) conduct a longitudinal study and show that culturally homogenous groups are more productive than heterogeneous groups in the short run, but in the long-run the difference converges and heterogeneous groups perform better in certain types of intellectual tasks (for comprehensive reviews of the experimental literature see Mannix & Neale, 2005; Milliken & Martins, 1996; Williams & O'Reilly, 1998).

Researchers have attempted to gain additional analytical leverage by formalizing arguments about individual-level heterogeneities and intellectual task performance. Hong and Page (2001/2004) propose a model in which agents are characterized by a *perspective-heuristic* pair, where a *perspective* is an agent's internal representation of a problem, and a *heuristic* is an algorithm that the agent employs to locate solutions. Together, a *perspective-heuristic* pair determines an individual's problem-solving capabilities, and aggregated at the group level, determines a group's problem-solving capabilities. Using this framework, Hong and Page show that if problems are sufficiently difficult such that no one agent can solve the problem individually, groups with diverse perspective-heuristic pairs outperform homogeneous groups at problem solving, even when the latter are comprised of individually higher ability problem solvers. In other words, diversity trumps ability (see also Bendor & Page, 2013 for a related formulation). Lazear (1999) develops a model in which diversity generates productivity gains when workers have the ability to communicate and possess skills and knowledge sets that are "relevant" and "disjoint." In his model, diversity has diminishing marginal returns and increasing marginal costs, implying an inverted-U-shaped relationship between diversity and productivity. Alesina and La Ferrara (2005) model the costs and benefits of diversity at the jurisdiction level and show, among other things, that diversity increases productivity at higher per capita output, where skill differentiation is likely to be more useful.

Despite a growing experimental and theoretical literature that suggests diversity improves group performance, few scholars have empirically identified such gains in a statistically convincing way at the aggregate level. Ottaviano and Peri (2006) analyze data on wages and rents in US metropolitan areas between 1970 and 1990 and find that US-born individuals receive higher wages and pay higher rents in areas with larger shares of foreign born, suggesting that diversity increases productivity. Peri (2012) shows that immigration has improved the total factor productivity across US states, arguably by promoting efficient task specialization. However, the direction of causality in these studies is ambiguous—is immigration the reason for economic productivity, or did productivity attract immigrants by creating economic opportunities? Because ethnic composition is endogenous to economic performance, the results are difficult to interpret (see Alesina & La Ferrara, 2005, p. 778, on this point). The management literature also provides

evidence that diversity enhances productivity at the firm level (Hollowell, 2007; Kochan *et al.*, 2003; Richard, McMillan, Chadwick, & Dwyer, 2003), but these studies rely on observational data without controlling for omitted factors that might affect both diversity and productivity. Because diversity is not randomly assigned, these studies are unable to identify causal effects, only correlations.

THE COSTS OF DIVERSITY

Although cultural diversity may bring about a mix of skills and perspectives that is useful for collective task performance, there is evidence that ethnic and cultural diversity complicates the group process, frequently leading to emotional dissatisfaction, decreased communication, and interethnic conflict (Pelled, Eisenhardt, & Xin, 1999; Tajfel, Billig, Bundy, & Flament, 1971; Tsui, Egan, & O'Reilly, 1992). Diversity is thus a double-edged sword, producing benefits in the form of greater economic productivity and costs in the form of reduced social cohesion (Alesina & La Ferrara, 2005). As a result, many scholars argue that even if diversity can be beneficial, it will be so only when it is well managed (Page, 2007; Swann, Polzer, Seyle, & Ko, 2004).

There are two prominent explanations for why diversity might reduce social cohesion and prospects for interethnic cooperation. At the most basic level, individuals may possess a cognitive tendency to create in- and out-group distinctions based on salient, ascriptive differences, attach positive utility to members of one's own group, and attach negative or no utility to members of an out-group (Tajfel *et al.*, 1971). According to this psychological theory, ethnic tensions are the result of a taste for racial discrimination and in-group favoritism. A second channel by which diversity may affect prospects for cooperation is by making it difficult to implement effective social sanctions and thereby deter opportunistic behavior. Because coethnics generally share a common language and culture and enjoy relatively dense social networks, they may simply be better equipped to monitor socially harmful behavior and enforce cooperation (Fearon & Laitin, 1996; Habyarimana, Humphreys, Posner, & Weinstein, 2007). Under this rational choice framework, ethnic tensions are not the result of inherent animosities but rational incentives for individuals to interact preferentially with in-group members.

In political science and economics, the potential costs of diversity are well known, and include increased likelihood of civil conflict (Esteban, Mayoral, & Ray, 2012; Horowitz, 1985; Montalvo & Reynal-Querol, 2005), labor market discrimination (Adida, Laitin, & Valfort, 2010; Becker, 1957; Bertrand & Mullainathan, 2004), lower levels of generalized trust (Alesina & La Ferrara, 2002; Glaeser, Laibson, Scheinkman, & Soutter 2000), the underprovision of

public goods provision (Alesina, Baqir, & Easterly, 1999; Miguel & Gugerty, 2005), low economic growth (Alesina, Devleeschauwer, Easterly, Kurlat, & Wacziarg, 2003; Easterly & Levine, 1997), and democratic instability (Dahl, 1971; Rabushka & Shepsle, 1972), among others. Importantly, however, the quality of evidence differs across topics. Some of this research—such as those studying the impact of diversity on civil conflict, economic growth, and democratic instability—rely heavily on cross-country comparisons. But because ethnic diversity across countries is correlated with a number of nontrivial characteristics—such as per capita income and latitude—such studies have not fully disentangled the effects of diversity. Moreover, there is a debate as to whether plural societies are especially prone to higher levels of ethnic conflict and lower levels of democratic performance. Lijphart (1977) shows that under certain institutional frameworks, heterogeneity is not a threat to democracy. Fearon and Laitin (1996) show that instances of interethnic cooperation outnumber instances of interethnic violence 2000 to 1 in Africa and the post-Soviet world in the first generation after independence—regions thought to be particularly prone to ethnic violence. Fearon and Laitin (2003) show that in cross-country regressions, the correlation between ethnic fractionalization and civil war disappears after controlling for per capita income. Nonetheless, the prevailing belief is that diversity poses serious challenges to the well-being of societies. Banerjee, Iyer, and Somanathan, for example, write:

“One of the most powerful hypotheses in political economy is the notion that social divisions undermine economic progress, not just in extremis, as in the case of civil war, but also in more normal times”

(2005, p. 639)

CUTTING-EDGE RESEARCH

Several working papers and recent publications make contributions to the study of diversity’s opposing effects. They represent advances because they either analyze the interplay between diversity’s costs and benefits, thus permitting a proper assessment of diversity’s net gains, or produce statistically convincing estimates of diversity’s costs and benefits using research designs capable of identifying causal effects. Some of this work also makes progress toward revealing the specific dimensions of cultural diversity (e.g., ethnic, linguistic, religious, or birthplace) that create gains in productivity and intellectual task performance.

A working paper by Alesina, Harnoss, and Rapoport (2013), for example, shows that—unlike measures of ethnolinguistic fractionalization—birthplace

diversity has strong positive effects on economic development across countries. The authors argue that people with different countries of births are more likely to exhibit the type of cognitive and functional differences useful for intellectual task performance than people of different skin color and languages, as people born in different countries have generally been exposed to different education systems, cultural values, and life experiences. To address endogeneity, Alesina et al. take an instrumental variables approach that involves specifying a gravity model of migration to predict birthplace diversity based on a set of exogenous bilateral geographic and cultural variables. Ortega and Peri (2012) rely on a similar identification strategy to estimate the productivity gains from immigration in a sample of 147 countries. They also find productivity gains from immigration, reporting that a 10 percentage-point increase in the share of foreign born is associated with 130–170% increase in per capita income. Their results also suggest that immigration has been more beneficial for economic performance than openness to trade, and that there are two avenues by which immigration might improve economic performance: by increasing total factor productivity and stimulating innovation. Ager and Bruckner (2011) explore the impact of immigration in the United States during the period of mass migration (1870–1920) and show that counties that became more culturally fractionalized (i.e., with many new groups) experienced gains in output per capita, whereas counties that became more polarized (i.e., with two contending groups) experienced reductions in output. Here, we see variation in the demographics of diversity have different implications for social outcomes.

Ashraf and Galor (2013) model both the social costs and the economic benefits of diversity in a single model, with diminishing marginal returns to both diversity and homogeneity. The model thus predicts an inverted-U-shaped relationship between diversity and economic performance. Consistent with this prediction, the authors show that comparative economic development in the precolonial and modern eras is a nonmonotonic function of genetic diversity. According to this line of thought, the high degree of diversity among African populations and the low degree of diversity among Native American populations has been detrimental for economic development, while the intermediate level of diversity in European and Asian populations has been beneficial. To address endogeneity, Ashraf and Galor use an instrument based on the well-established “out of Africa” theory, which posits that the human species originated in East Africa 150,000 years ago and thereafter proceeded to inhabit the entire globe in a stepwise migration process, with subgroups leaving their initial settlements to create new settlements further away, taking with them only a subset of the overall genetic diversity found in their original settlements. Prehistoric migratory distance from East Africa thus has a strong

negative effect on genetic diversity. And because migratory distance from East Africa should have no direct effect on economic development, Ashraf and Galor are able to employ an exogenous measure of diversity to identify its causal effects on productivity.

Experimental work by Jeon (2014a) also identifies a humped-shaped effect of diversity. Using a controlled problem-solving competition in Nairobi, Kenya, with random assignment of subjects into ethnically homogeneous and heterogeneous groups, he assesses two classes of strategies for managing diversity: (i) *assimilationist* strategies, which encourage the construction of superordinate social identities (e.g., based on a team, religion, or nation) and (ii) *multiculturalist* strategies, which entail the construction of shared intergroup beliefs that acknowledge the value of each group's culture. Results are mixed. The multicultural prime improves intellectual task performance in ethnically divided groups, but only the assimilation prime improves prospects for interethnic cooperation. Hoogendoorn and van Praag (2012) also consider the nonmonotonic effects of diversity using a field experiment with 550 business students who were asked to create real companies as part of their curriculum. The authors experimentally manipulate ethnic composition of student teams and find that a threshold level of diversity is needed before any gains from heterogeneity are detectable in sales and profits.

Jha (2007, 2013) considers the effect of economic complementarities across ethnic groups, or, *ethnic complementarities*, on prospects for ethnic tolerance and peaceful coexistence in plural societies. He argues that if intergroup complementarities are nonreplicable and there exist nonviolent mechanisms for distributing the gains from trade, ethnic complementarities can encourage peaceful coexistence by enhancing the gains from interethnic cooperation and, hence, the costs of violence. These predictions are borne out in a dataset of Indian riots at the town-level between 1850 and 1950, which indicates that Hindu–Muslim violence was five times less severe in Indian localities where Hindu and Muslim groups had in early eras performed complementary economic functions. Building on Jha (2013), Jeon (2014b) uses a game-theoretic model of decentralized intergroup cooperation to show that ethnic complementarities create strong incentives for groups to construct effective cooperative institutions to support interethnic exchange and realize the gains from complementarity. These studies suggest that one strategy for minimizing the costs and maximizing the benefits of diversity is to encourage ethnic specialization and trade. A positive externality of this approach may be increased economic efficiency following the principle of comparative advantage, although as we pointed out earlier, the evidence for this remains inconclusive.

MOVING FORWARD

Social science research on cultural diversity has made substantial progress toward improving our understanding of diversity's social costs and economic benefits. However, as with most good research programs, by highlighting new patterns in human behavior, this research has generated many new questions. Moving forward, we believe there are four unresolved issues that should and will be the focus of future research.

First, future research will clarify the conditions under which one of the two opposing forces of diversity dominates. Existing research suggests a linear increase in benefits as societies move from ethnic polarization to fractionalization (Ager & Bruckner, 2011). This finding is partially at odds with alternative theories of diversity that predict an inverse-U-shaped relationship between fractionalization and performance (e.g., Ashraf & Galor, 2013; Lazear, 1999). Future work will require an iterative process of theory building and empirical testing to shed light on the social, political, economic, and institutional characteristics that distinguish cases in which diversity leads to productivity gains from the cases in which diversity leads to underperformance.

Second, future research will need to fill the conceptual gap in our understanding of the relationship between the types of *functional* diversities (e.g., skill and cognitive diversity) that are hypothesized to enhance group performance at knowledge-intensive activities, and the types of *social* diversities (e.g., ethnic, linguistic, birthplace) that become the basis for identity, and, often, fractionalization. Although there are good reasons to believe there is a correlation between functional and social diversity—such that individuals from a variety of different ethnic, cultural, and religious backgrounds would be more likely to exhibit the types of functional diversities important for group performance (Alesina, Harnoss, & Rapoport, 2013; Hong & Page, 2001; Page, 2007; Thomas & Ely, 1996)—rigorous empirical analyses for how these functional differences develop in the first place, or which dimensions of diversity are most beneficial, are lacking.

Third, there is a need to look beyond economic outcomes to properly assess the full benefits of cultural diversity. In theory, gains from diversity in the form of improved problem-solving, innovation-generation, prediction, and decision-making capabilities can shape a range of outcomes of interest. Diverse governments, for example, may be better than homogenous governments at designing effective public policies, dealing with political crises, and stimulating the economy. Heterogeneous communities may be more robust and superior at finding innovative solutions to local problems, such as insecurity and the risk of natural disasters. If gains from diversity are acknowledged across social divisions, it may also generate incentives for societies to create stronger cooperative institutions in both the public and

private spheres to support valuable intergroup exchange, for instance, in the form of legal protections for minorities and resources to acquire the tools for success in the host society. These are speculations, but they are not inconsistent with the implications of existing theory (Page, 2007/2011). Further investigation may reveal that the gains from diversity are far reaching.

Fourth, and perhaps most importantly, research will need to exploit the power of experimental methods to identify viable strategies for reducing discriminatory behavior and realizing the gains from diversity. Social psychologists have long employed laboratory experiments to reveal the mechanisms driving racial prejudice and identify promising prejudice-reduction strategies (see Paluck & Green, 2009 for a review). However, the next step for the literature is to move out of the laboratory and into the field, where interventions can be tested using real-world outcomes and with groups with varying degrees of past cooperation and conflict. This research should also begin to catalog the numerous approaches and interventions that exist and estimate their cost-effectiveness with the purposes of identifying the most viable strategies for promoting peace, cooperation, and economic productivity in plural societies. Owing to the empirical difficulties with separating correlations and disentangling causal effects in observational data, the experimental approach is likely to provide analytical leverage not available from other research methods.

We believe that the resolution of these issues will have practical importance in our world of economic and cultural integration, where groups, neighborhoods, villages, cities, and countries are becoming increasingly more diverse. Owing to the high costs of reversing the technological advances that permit cultural mixing, and the unacceptable costs of eliminating diversity from within our borders, there is a necessity for developing effective strategies for managing multicultural societies. Ideally, these strategies will not only be effective in reducing the social costs of cultural diversity but also in helping societies take advantage of the potential benefits of increasing cultural diversity within their borders.

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Sangick Jeon is a Co-Founder at Groundtruth.io. His research explores public policies, interventions, and social innovations that can resolve pressing global problems, like the persistence of poverty and violence. Sangick's work has been published in scientific journals, covered by media outlets, and supported by numerous grants and fellowships, including those from the National Science Foundation, the Russell Sage Foundation, and the Stanford Graduate School of Business. He received his Ph.D. from Stanford University.³

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