

DifferentTakes

Pollution, Communities, and Schools: A Portrait of Environmental Justice on Southern California's "Riskscape"

by Rachel Morello-Frosch and
Manuel Pastor, Jr.

Lately, politicians have been talking passionately about diversity and equal opportunity in America. Changing demographic realities are pushing politicians in this direction as they are forced to contend with a rapidly changing political and economic landscape. Even President George W. Bush recently unveiled initiatives for improving primary and secondary education for minority and low-income students, emphasizing that no child should be left behind.

Environmental justice—with its emphasis on political economy, social justice, discrimination, environmental degradation, and public health—provides a framework for public discussions about race, class and opportunity in this country. Indeed, activists, academics and some decision-makers argue that biases within environmental policy-making and the regulatory process, combined with discriminatory market forces, have resulted in disproportionate exposures to hazardous pollution among the poor and communities of color. Disparities in exposures to environmental hazards may play an important role in the complex pattern of disparate health, educational and economic status among the poor and people of color in the United States.

Yet, causally linking the presence of environmental pollution with potentially adverse health effects is challenging, particularly in situations where communities are chronically exposed to complex, chemical mixtures over long periods of time.¹ We sought to address this challenge by examining whether air pollution and associated health risks are an equal opportunity problem in southern California.² Specifically, we looked at 148 air toxics, a category of air pollutants also known as hazardous air pollutants (HAPs) that are listed under the 1990 Clean Air Act Amendments. By combining modeled concentration estimates generated by the U.S. Environmental Protection Agency with cancer toxicity information, we estimated lifetime cancer risks associated with air toxics exposures and examined their distribution among diverse communities in the region.

DifferentTakes

c/o Population & Development Program
Hampshire College-CLPP
Amherst, MA 01002-5001 USA
413/559-6046 fax 413/559-6045
<http://hamp.hampshire.edu/~clpp/popdev.html>

Opinions expressed in this publication
are those of the individual authors unless
otherwise specified.

The resulting “riskscape” was startling. Lifetime cancer risk estimates were high for all residents in the region, often exceeding the Clean Air Act goal of 1 in a million by a range of 10 to 1000 times. Nevertheless, race/ethnicity played a persistent explanatory role in the distribution of these risks, even after controlling for well-known causes of pollution such as population density, income, land use, and a proxy for political power and assets (home ownership). African-Americans, Latinos, and Asians appear to face a higher-than-average estimated lifetime cancer risk associated with outdoor pollution exposures. Nearly one-third of southern California’s residents of color live in the areas with the highest cancer risk while only fifteen percent of Anglos live in these areas. The disparities are even greater if we factor in cancer risks from mobile source emissions, such as cars, trucks and airplanes.

Although our study results have implications for environmental health in terms of where diverse communities live, residents may spend a significant portion of their day in other places such as work or school. As a result, we expanded our inquiry to focus on Los Angeles school children who are likely to spend much of their day in schools that may not be located in the same neighborhood where they live, particularly given magnet programs and cross-town busing.³ Only a handful of researchers have addressed environmental inequalities among children, who tend to be more vulnerable than adults to the adverse health effects of pollution.

As the second most populous district in the country, we mapped each school in the Los Angeles Unified School District against local environmental conditions, with the racial composition of the student body, test

scores, teacher experience, and other variables all tied together so we could look for patterns. Estimating cancer and respiratory risks associated with pollution exposures from large and small manufacturers and traffic near each school revealed striking distribution patterns. The fifth of the schools with the cleanest air were nearly 30 percent Anglo (in a school district that is less than 15 percent white), while the fifth of the schools with the most polluted air were 92 percent minority.

Do these persistent health risk disparities among Los Angeles school children have other impacts? We decided to look at the relationship between respiratory risks and school achievement, as measured by the Academic Performance Index mandated by California’s Governor Gray Davis in his 1999 education reforms. Even after taking into consideration the poverty level of the students, their English language proficiency, the percent of teachers with emergency credentials, the educational level of parents, and other standard predictors of academic achievement, higher respiratory risks from air pollution had a negative and statistically significant effect on test scores.

The causal chain and biological mechanisms that underlie these results remain unclear, and detailed epidemiological work is necessary. Still, this preliminary association of pollution exposure and impaired learning is troubling: Given that many minority and low-income students already face academic challenges, why put one more barrier in the way?

Recently, there have been particularly dramatic examples of environmental hazards near some southern California schools, such as a chrome-plating plant located near Suva Elementary School in Bell Gardens that parents blamed for a cluster of cancer cases among both students and teachers. While health officials and researchers could not show a conclusive link, the plant was shut down and the site cleaned under pressure from community groups and eventually the state’s Department of Toxic Substances Control. Even after these clean-up efforts, the extent of residual contamination remains in dispute, with taxpayer monies and the Department of Toxic Substances Control’s attention likely to be needed for some time to come.

Cases like Suva Elementary—where over 95 percent of the students are Latino—along with our study results, indicate that pollution and its effects are not an equal opportunity problem. If environmental risks are indeed disproportionately concentrated in minority schools,

and the impacts stretch beyond health to affect student achievement, this is yet another obstacle in the path of children and their families who may already face barriers of poverty, neighborhood instability, and under-performing schools.

Increasingly, scientists and regulators alike are also linking health issues among children to environmental pollution. Over the last decade, researchers have raised serious concerns about the rise in learning disabilities among children. Approximately 12 million children in this country suffer from learning, developmental or behavioral problems, and the number of learning-disabled children enrolled in special education programs increased nearly 200 percent over the last twenty years. Soaring rates of childhood asthma, especially among inner city youth, have been a particular concern, along with the resulting respiratory problems linked to school absenteeism and diminished learning capacity.

While southern California can boast of dramatic air quality improvements in recent years, millions of the region's residents still breathe air every day that is among the nation's most polluted. Many studies investigating the health impacts have focused on the immediate effects on adults, such as eye irritation, coughing, and chest tightness. Yet new research is suggesting that there may also be long-term adverse effects on kids: for example, investigators looking at the Los Angeles area recently concluded that air pollutants commonly found in smog can significantly decrease lung function and lung growth rates in children over time.

According to district officials, Los Angeles is slated for eighty-six new schools in the

coming five years. With overcrowding rampant and the school age population growing, the expansion of facilities is desperately needed. Indeed, environmental health concerns need not be an excuse to stop building new schools, as failing to build will have a disproportionately negative impact on the educational opportunities and futures of minority school children. Nevertheless, the results of our study—as well as recent controversies and environmental problems that derailed proposed sites for other schools—suggest that any future school siting and construction plans should take into account the particular vulnerability of children and communities to environmental hazards.

Similarly, economic pressures, such as our current energy crisis, should not over-ride concerns about the health of neighborhoods when deciding where to site new industrial facilities. Some might argue that because minority workers are disproportionately represented in the industrial labor force, the quest for cleaner air and renewable energy would cost jobs and raise another sort of social justice issue. But there is less evidence of this downside than most observers think. Using the same exposure and cancer risk data for Los Angeles County, we found that while polluted areas boast a higher level of jobs, employment growth occurred much faster in cleaner areas over the 1980s and 1990s, reflecting a synergy and not a competition between environmental concerns and economy.⁴

While politicians and pundits argue over how best to ensure economic and educational opportunities for all Americans, few pay attention to environmental equity. Yet the patterns we have uncovered regarding communities of color and minority children suggest a clash with basic American principles of fairness in treatment and opportunity and an unequal impact on economic and educational outcomes. It is time for policy makers and others to think of new creative strategies to ensure that all Americans have an equal opportunity to a clean environment.

Rachel Morello-Frosch is an Assistant Professor with the Department of Health Education at San Francisco State University. She is an epidemiologist and environmental health scientist, whose research interests include air toxics, comparative risk assessment and environmental justice, and conflicts over science and risk in policy-making.

Manuel Pastor, Jr. is a professor of Latin American/Latino Studies and Director of the Center for Justice, Tolerance and Community, at the University of California, Santa Cruz. His current research

interests include environmental equity and changing labor markets in regional economies. The authors are currently collaborating on a community-academic partnership that includes research, organizing, and policy advocacy on environmental justice issues in southern California.

Endnotes

¹ Institute of Medicine. 1999. "Toward environmental justice: Research, education, and health policy needs." Pp 14-21. Washington, DC: Committee on Environmental Justice, Health Sciences Policy Program, Health Sciences Section, Institute of Medicine.

² Morello-Frosch, R, M Pastor, and J Sadd. 2001. "Environmental Justice and Southern California's "Riskscape"-The Distribution of Air Toxics Exposures and Health Risks Among Diverse Communities." *Urban Affairs Review* 36:551-578.

³ Pastor, Manuel, James Sadd, and Rachel Morello-Frosch. 2001. "Who's Minding the Kids? Pollution, Public Schools and Environmental Justice in Los Angeles." *Social Science Quarterly* in press.

⁴ Pastor, M., J. Sadd, and J. Hipp. 2001. "Which came first? Toxic facilities, minority move-in, and environmental justice." *Journal of Urban Planning*, Forthcoming.