

Raul Perez Lejano, Ph.D., D.Env.

Associate Professor of Environmental Conservation Education

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PRIMARY AREAS OF INTEREST

My primary field is that of Environmental Science and Policy, and my research revolves around complex ways of knowing the environment and the design of institutions for engaging people in environmental action. As a PhD student, I studied with Lloyd Shapley, Nobel prizewinner in economics, on the theory of decisions and games. I have used the integrative policy lens to study climate change debate, studying communicative approaches to foster citizen engagement. The integrative policy approach also informs my work on the social ecology of urban resilience and the logics of collective action.

PROFESSIONAL BACKGROUND

I maintain an active professional profile in environmental planning and policy, most recently completing a series of studies on the vulnerability of urban communities to extreme weather events for WHO. In my work on global environmental justice, I participate in a number of community-based organizations –e.g., as an executive board member of Communities for a Better Environment, board member of Union de los Residentes para Proteccion Ambiental de Val Verde, fellow of the Community-Based Coastal Resource Management Center in the Philippines, etc.

EDUCATION

Ph.D. Environmental Health Sciences	UCLA (Area: Environmental Decision-making)	1998
D.Env. Environmental Science & Eng.	UCLA	1992
M.S. Environmental Engineering	UC Berkeley	1986
B.S. Civil Engineering (cum laude)	Univ. of the Philippines	1984

ACADEMIC APPOINTMENTS

Associate Professor	New York University Department of Teaching and Learning, Env. Conserv. Education	Present
Associate Professor	The University of Hong Kong Dept. of Urban Planning & Design (while on leave from UC Irvine)	2012 - 2013
Associate Professor	University of California, Irvine Department of Planning, Policy, & Design	2007 - 2013
Assistant Professor	University of California, Irvine Department of Planning, Policy, & Design	2002 - 2007
Visiting Asst. Professor	Massachusetts Institute of Technology Department of Urban Studies and Planning	2000 - 2002

REPRESENTATIVE GRANT FUNDED PROJECTS

NSF PIRE (Lejano, Co-PI) \$4.8M (2012-2016) Low-carbon footprint water technologies.
NUS AcRF Grant (Lejano, PI) \$25K (2009-2011) Narratives and ecological networks.
NOAA Sea Grant (Lejano, Co-PI) \$210K (2007-2009) Policy design for stormwater mgt.
First Five LA (Lejano, PI) \$64K (2008-2010) Participatory action research for health.

BOOKS

Lejano, Raul (2006), *Frameworks for Policy Analysis: Merging Text and Context*. Routledge, New York.

Lejano, Raul, Helen Ingram, and Mrill Ingram (2013), *The Power of Narrative in Environmental Networks*, MIT Press, Cambridge, Massachusetts.

JOURNAL ARTICLES

Published Between August, 2013 and March, 2015

- J47 Lejano, R., Tan, J. M., & Wilson, M. (2015). Communicating risk: Learning from Typhoon Haiyan. *Nature*, 518(7537), 35-35 (Correspondence).
- J46 Lian, H., & Lejano, R. P. (2014). Interpreting Institutional Fit: Urbanization, Development, and China's "Land-Lost". *World Development*, 61, 1-10.
- J45 Lejano, Raul and Francisco Fernandez (2014), "Norm, network, and commons: The invisible hand of community," *Environmental Science & Policy* 36:73-85.
- J44 Lejano, Raul, Eduardo Araral, and Dianne Araral (2014), "Introduction to the Special Issue: Interrogating the Commons," *Environmental Science & Policy* 36:1-7.
- J43 Ingram, M., Ingram, H., & Lejano, R. (2014). What's the story? Creating and sustaining environmental networks. *Environmental Politics*, 23(6), 984-1002.
- J42 Park, S. J., Ogunseitan, O. A., & Lejano, R. P. (2014). Dempster-Shafer theory applied to regulatory decision process for selecting safer alternatives to toxic chemicals in consumer products. *Integrated environmental assessment and management*, 10(1), 12-21.
- J41 Howlett, M., & Lejano, R. P. (2013). "Tales from the crypt: The rise and fall (and rebirth?) of policy design," *Administration & Society*, 45(3), 357-381.

Published Between August, 2007 and August, 2013

- J40 Goldstein, B., A. Taufen Wessells, R. Lejano, and W. Butler (2013), "Narrating resilience: Transforming urban systems through collaborative storytelling," *Urban Studies* published online: 0042098013505653.
- J39 Lee, E., R. Lejano, and R. Connelly (2013), "Regulation-by-information in areas of limited statehood: Lessons from the Philippines' environmental regulation," *Regulation & Governance* 7(3):387-405.
- J38 Lejano, Raul, Joana Tavares-Reager, and Fikret Berkes (2013), "Climate and narrative: Environmental knowledge in everyday life," *Environmental Science & Policy* 31:61-70.
- J37 Lejano, Raul and Daniel Stokols (2013), "Social ecology, sustainability, and economics," *Ecological Economics* 89:1-6.
- J36 Lejano, Raul and Savita Shankar (2013), "The contextualist turn and schematics of institutional fit: Theory and a case study from Southern India," *Policy Sciences* 46(1): 83-102.
- J35 Stokols, D., R. Lejano, & J. Hipp (2012), "Enhancing the resilience of human-environment systems: A social ecological perspective," *Ecology & Society* 18(1):7.
- J34 Lejano, Raul and Ching Leong (2012), "A hermeneutic approach to explaining and understanding public controversies," *JPART Journal of Public Administration Research & Theory* 22 (4): 793-814.
- J33 Lejano, Raul and Helen Ingram (2011), "Modeling the commons as a game with vector payoffs," *Journal of Theoretical Politics* 24(1):66-89.
- J32 Lejano, Raul (2011), "A note on solution concepts for nontransferable utility games," *Journal of Mathematical Economics* 47:777-780.
- J31 Lejano, Raul et al. (2011), "Patchwork of land use, tapestry of risk," *Journal of Environmental Planning & Management* 55(1):1-15.
- J30 Lejano, Raul; Munoz-Melendez, Gabriela; Aguilar Benitez, Ismael; and Sung Jin Park (2010), "On the need to redesign the CDM carbon trading program," *Environmental Science & Technology* 44:6914-6916.

- J29 Lejano, Raul and Daniel Stokols (2010), "Understanding minority residents' perceptions of neighborhood health risks and environmental justice: New methods, findings, and policy implications," *Journal of Architectural Planning and Research* 27(2):107-123.
- J28 Lejano, Raul and Helen Ingram (2009), "Collaborative networks and new ways of knowing," *Environmental Science & Policy* 12:653-662.
- J27 Erualdo Gonzalez and Raul Lejano (2009), "New urbanism and the barrio," *Environment & Planning A* 41:2946-63.
- J26 Lejano, Raul (2008), "Technology and institutions: A critical appraisal of GIS in the planning domain," *Science, Technology & Human Values* 33:653-678.
- J25 Lejano, Raul (2008), "The phenomenon of collective action: Modeling institutions as structures of care," *Public Administration Review* May/June:491-504.
- J24 Smith, C. Scott, Raul P. Lejano, Oladele Ogunseitan, and Aaron Hipp (2007), "Cost effectiveness of regulation-compliant filtration to control sediment and metal pollution in urban runoff" *Environmental Science & Technology* 41:7451-7458.
- J23 E. R. González, R. P. Lejano, G. Vidales, R. F. Conner, Y. Kidokoro, B. Fazeli, and R. Cabrales (2007), "Participatory action research for environmental health: Encountering Freire in the urban barrio," *Journal of Urban Affairs*, 29(1):79-102.
- J22 Lejano, Raul and Helen Ingram (2007), "Place-based conservation: Lessons from the Turtle Islands," *Environment: Science and Policy for Sustainable Development* 49(3):24-28.
- J21 Lejano, Raul, Helen Ingram, John Whiteley, Daniel Torres, and Sharon Agduma (2007) "The importance of context: Integrating resource conservation with local institutions," *Society & Natural Resources* 20(2):1-9.

Published Prior to 2007

- J20 Lejano, Raul and Anne Taufen Wessells (2006), "Community and economic development: Seeking common ground in discourse and in practice," *Urban Studies* 43(9):1469-1489.
- J19 Lejano, Raul and C. Scott Smith (2006), "Incompatible land uses and the topology of cumulative risk," *Environmental Management* 37(2):230-246.
- J18 Hipp, Aaron, Oladele Ogunseitan, Raul Lejano, and C. Scott Smith (2006), "Optimization of stormwater filtration at the urban/watershed interface," *Environmental Science & Technology* 40(15): 4794-4801.
- J17 Nixon, Hilary, Raul Lejano, and Richard Funderburg (2006), "Planning methodology for predicting spatial patterns of risk potential from industrial land use," *J. Environmental Planning and Management* 49(6):829-847.
- J16 Lejano, Raul and Alma Ocampo-Salvador (2006), "Comparative analysis of two community-based fishers' organizations," *Marine Policy* 30(6):726-736.
- J15 Lejano, Raul (2006), "Optimizing the layout and design of branched pipeline water distribution systems," *Irrigation and Drainage Systems* 20(5):125-137.
- J14 Lejano, Raul (2006), "Theorizing peace parks: Two models of collective action," *Journal of Peace Research* 43(5):563-581.
- J13 Lejano, Raul (2006) "The design of environmental regimes: Social construction, contextuality, and improvisation," *International Environmental Agreements* 6(2):187-207.
- J12 Lejano, Raul and Hirose Rei (2005), "Testing the assumptions behind emissions trading in non-market goods: The RECLAIM Program in Southern California," *Environmental Science and Policy* 8:367-377.
- J11 Lejano, Raul and Jonathon Ericson (2005), "Tragedy of the temporal commons: Spatial patterns of soil-bound lead and the anachronicity of risk," *Journal of Environmental Planning and Management* 48(2):299-318.
- J10 Kolodziej, Kris, Raul Lejano, Chikako Sassa, Sushila Maharjan, Jalal Ghaemghami, and Thomas Plant (2004), "Mapping the industrial archeology of Boston." *URISA Journal*, 16(1):5-12.
- J9 Lejano, Raul and Climis Davos (2002), "Fair share: siting noxious facilities as a risk distribution game under nontransferable utility," *J. of Environmental Economics and Management* 43:251-266.

- J8 Lejano, Raul et al. (2002), "Rationality as social justice and the spatial-distributional analysis of risk," *Environment and Planning C*, 20:871-888.
- J7 Lejano, Raul and Hiro Iseki (2001), "The question of environmental justice: The spatial distribution of hazardous waste TSDs in Los Angeles," *J.of Urban Planning and Development* 127(2):51.
- J6 Lejano, Raul and Climis Davos (2001), "Siting noxious facilities with victim compensation: n-person games under transferable utility," *Socio-Economic Planning Sciences* 35:109-124.
- J5 Davos, Climis and Raul Lejano (2001), "Analytical perspectives of cooperative coastal management," *Journal of Environmental Management* 62:123-130.
- J4 Lejano, Raul and Climis Davos (1999), "Cooperative solutions for sustainable resource management," *Environmental Management* 24(2):167-175.
- J3 Lejano, Raul, Pacita Ayala, and Erlinda Gonzales (1997), "Optimizing the mix of strategies for the control of vehicular emissions," *Environmental Management* 21(1):79-87.
- J2 Lejano, Raul and Climis Davos (1995), "Cost allocation of multi-agency water resource projects," *Water Resources Research* 31(5):1387-1393.
- J1 Lejano, Raul et al.(1992), "Assessing the benefits of water reuse," *Water Env't & Technology* 8:44-50.

BOOK REVIEWS ABOUT PUBLISHED WORKS

Elliott, M. (2014). A Review of "The Power of Narrative in Environmental Networks" Raul Lejano, Mrill Ingram, and Helen Ingram.(2013). *Journal of the American Planning Association*, 80(2),190-191.

James, E. (2014). *The Power of Narrative in Environmental Networks*. *Interdisciplinary Studies in Literature and Environment*, 21(2), 493-495.

Laberge, Y. (2014). Review: *The Power of Narrative in Environmental Networks*. *Electronic Green Journal*, 1(37).

Miller, H. T. (2014). *The power of narrative in environmental networks*, by Raul Lejano, Mrill Ingram, and Helen Ingram. *Critical Policy Studies*, 8(1),118-120.

Short, C. (2014). Lejano, Raul, Mrill Ingram and Helen Ingram (2013). *The Power of Narrative in Environmental Networks*. *International Journal of the Commons*, 8(2),690-691.

Young, N. (2014). *The Power of Narrative in Environmental Networks*. by Raul Lejano, Mrill Ingram, and Helen Ingram, 2013, *Review of Policy Research*, 31(3),253–255

Neeley, J. (2015). A Review of "The Power of Narrative in Environmental Networks" Lejano, Raul, Mrill Ingram, and Helen Ingram, *History: Reviews of New Books*, 43(2),81-82.

PROFESSIONAL/TECHNICAL REPORTS

- P15 Lejano, R. (2011), Consolidated Report: Resilience of Health Systems to Disasters, Case Studies from the Western Pacific Region, WHO –World Health Organization.
- P14 Lejano, R., Sablan, B., Bonje, A., and A. Dandiego (2010), Post-Flood Emergency Response Review: Testing the Toolkit for Needs Assessment and Recovery Planning, WHO –World Health Organization, Western Pacific Region.
- P13 Lejano, R. et al. (2010), Policy Report 2010: Fertility Patterns Among the Urban Poor. Social Ecology Research Center, Irvine.
- P12 Lejano, R., Sablan, B., Bonje, A., and A. Dandiego (2010), Post-Flood Emergency Response Review: Testing the Toolkit for Needs Assessment and Recovery Planning, WHO –WorldP12
Lejano, R., Sablan, B., Aldaba, J., and J. Dumlaio (2010), Assessing the Impact of Disasters on

- Health Systems: A Toolkit for Needs Assessment and Recovery Planning, WHO --World Health Organization, Western Pacific Region.
- P11 Lejano, Raul (2010), "Urban Environmental Quality: Perceptions and Measures" in Encyclopedia of Environmental Health, Elsevier, Oxford.
- P10 Sablan, B., Lejano, R., Dandiego, A., and A. Bonje (2010), Program Evaluation: Assessment of the Coverage of Health Services Provided in Response to Typhoons Ondoy, Peping, and Santi, WHO --World Health Organization, Western Pacific Region.
- P9 Lejano, R., Sablan, B., and J. Aldaba (2009), Model Development: Risk Preparedness Methodology, WHO --World Health Organization, Western Pacific Region.
- P8 Lejano, R. et al. (2006), Participatory Action Research for Community Health in Southeast Los Angeles, A Report to the First Five Commission, Huntington Park.
- P7 Lejano, R. et al. (2004), Health Risk Assessment of the Chiquita Landfill, Irvine.
- P6 Lejano, R. et al. (2002), Sonando en El Viento, Collaborative Environmental Health Research in Springfield, MA, MIT, Cambridge, Mass.
- P5 Lejano, R. et al. (2002), The Palawan Island Sustainability Mapping Project, Palawan Council for Sustainable Development, MIT, Cambridge, Mass.
- P4 Lejano, R. et al. (2000), Community-Based Waste Management Master Plan for Binan, Laguna.
- P3 Lejano, R. (1997), Master Plan and Rate Study, San Jose Water Reuse Program, San Jose.
- P2 Lejano, R. et al. (1997), Draft Environmental Impact Report, Terminal Island Water Reuse Project, Los Angeles.
- P1 Lejano, R. et al. (1997), Water and Stormwater Master Plan for Cabanatuan City, Philippines, United Nations Development Programme.

BOOK CHAPTERS AND REVIEWS

- C8 Lejano, M. B. R., & Qin, C. Z. (2013). Shapley, Lloyd S.(1923). The New Palgrave Dictionary of Economics, 7.
- C7 Lejano, Raul (2012), "Postpositivism and the policy process," in Araral, Howlett, and Ramesh (eds.) *Routledge Handbook of Public Policy*, Routledge, New York.
- C6 Lejano, Raul (2008), "Book review: Democratic constitutional design and public policy," *Journal of Comparative Policy Analysis*, 10(1):94-95.
- C5 Lejano, Raul and Helen Ingram (2007), "How social networks enable adaptation to system complexity and extreme weather events," in Pahl-Wostl, Kabat, and Moltgen (eds.), *Adaptive and Integrated Water Management: Coping with Complexity and Uncertainty*, Springer-Verlag, Berlin.
- C4 Lejano, Raul (2007) "Peace games" in S. Ali (ed.), *Peace Parks: Conservation and Conflict Resolution*, MIT Press, Cambridge, Mass.
- C3 Ingram, Helen and Raul Lejano (2007) "Transcending multiple ways of knowing water resources in the United States," in Huitema and Meijerink (eds.), *Water Transitions*, Elgar Press.
- C2 Davos, Climis and Raul Lejano (2000), *Environmental Evaluation*, Online Textbook.
- C1 Lejano, Raul (1998) "Ecology and the human equation," in (Espiritu, Lejano, Peralta, Ronquillo, and Salcedo) *Current Issues*, Katha Publishing, Quezon City.

RECENT OP-EDS AND OTHER ARTICLES IN POPULAR MEDIA.

- M3 "Rethinking institutions in a network age, " Barometer, Monthly Periodical of Informed Judgement. Fall, 2010.
- M2 "The value of networking," Rapporteur May, 2010 4(1):37-40.
- M1 "What went wrong? Like sound of 1 hand clapping," Phil. Daily Inquirer (front page) 10/08/2009.

GRANT-FUNDED RESEARCH PROJECTS (2000-2012)

RGC (Lejano, PI) \$21K (2010-2012)

Ethics of urbanization: Post-materialism and traditional places in Hong Kong.
NSF PIRE (Lejano, Co-PI) \$4.8M (2012-2017)
 Eng., env., and human dimensions of low-energy technologies for treating water.
UCI Green Materials Initiative (Lejano, PI) \$35K (2010-2012)
 Novel methods for risk analysis of toxic substances: D-S and assumption set theory.
NUS AcRF Grant (Lejano, PI) \$25K (2009-2011)
 Book project: Narratives and ecological networks.
NOAA Sea Grant (Lejano, Co-PI) \$190K (2007-2009)
 BMPs for stormwater mgt.
Climate Change Research: Carbon Trading in the Cal.-Baja Region (\$40K, PI)
 Policy evaluation of carbon trading regime under CDM program in Oaxaca, Mexico.
New Analytics for Combining Multiple Evidence in Risk Assessment (\$29K, PI)
 Development of assumption set and possibilistic methods for combining evidence.
Information-Based Environmental Regulations (RGC, \$190K, Co-PI)
 Comparative analysis of two IBER programs: PROPER (Indonesia) & Ecowatch (Philippines)
Industrial Archeology of Boston (BPHC, \$45K, PI)
 Mapping "historical brownfields" over a 200 year period, assessing contaminant residuals.
Stormwater Management Best Practices (NOAA, \$210K, PI)
 Coupled systems model (hydrologic/spatial/economic) for optimizing runoff controls.
Narrative Analysis in Policy and Planning Theory (SSRC, \$15K PI)
 Book project on how narrative is a powerful lens for analyzing collective action.
Resilience of Health Systems to Disruption (WHO, \$55K, PI)
 Studies on how to protect health systems from extreme weather events and other disruptions.
Fertility in Low-Income Informal Settlements in Southeast Asia (NUS, \$20K, Co-PI)
 Ethnographic research of high fertility rates in low-income neighborhoods in Manila.

INVITED LECTURES/CONFERENCE PRESENTATIONS (last 5 years)

10/5/12 "Planning as Emplotment: Narratives of Sustainability," Hong Kong University.
 9/14/12 "Urban governance and the ethic of care," Seoul National University.
 7/10/12 "East vs. West: Distinguishing Institutional Types," International Political Science Association, Madrid.
 7/7/12 "Hermeneutic Policy Analysis," Interpretive Policy Analysis Conference, Tilburg.
 7/5/12 "Policy Hermeneutics: Integrating Text and Context," Interpretive Policy Analysis Conference, Tilburg.
 10/14/11 "Urban Phenomenology and the City as Emplotment" ACSP Conference, Salt Lake City, Utah, with Anne Taufen Wessells.
 6/23/2011 "The Hermeneutics of Water", Interpretive Policy Analysis Conference, Panel: Panel 10: Impact of interpretive methods on water governance, Wales, UK, Presentation, Presenter & Author, with Ching Leong.
 3/18/2011 "Cities of Care", Urban Affairs Association Annual Conference, Urban Affairs Association, Panel: Urban Theory, New Orleans, Louisiana, Presentation.
 3/12/2011 "Narrative networks and social-ecological systems", Resilience Conference, Resilience Alliance, Tempe, Arizona, Presenter & Author, with Ingram, H. and Ingram, M.
 10/20/2010 "Phenomenological Approaches to Social Ecological Research," Spatial and Contextual Analysis Working Group, University of California, Irvine.
 3/10/2010 "New Urbanism and the Barrio", Urban Affairs Association, Annual Conference, Honolulu, Hawaii.
 12/19/2009 "Comparative Policy Analysis," Tamkang University, Tsam Tsui, Taiwan.
 12/18/2009 "Organizational Dimensions of Extreme Events: Conceptualizing Typhoon Ondoy", Conference on Disaster Risk Prevention, National Taipei University, Taiwan.
 12/17/2009 "Eastern vs. Western Policy Theory?", School of Public Administration, National Taipei University, Taiwan.
 12/15/2009 "Integrative Approaches to Policy Analysis", School of Public Administration, National Taipei University.

- 7/15/2009 "Sustainable Urbanism", Kellogg College, Oxford University.
- 3/10/2009 "A Relational Model of Collective Action: From Theory to Institutional Design", Lee Kuan Yew School of Public Policy, Singapore.
- 1/21/2009 "The Water-Energy Nexus", School of Environment and Natural Resources University of Michigan, Ann Arbor.
- 9/17/2008 "Why Institutions Resist Incorporating Climate Change Scenarios Into Agency Practice", UNESCO-IHP Symposium, UNESCO, Paris, Talk. Refereed.
- 6/15/2008 "Collective Action and Social Movements", Hong Kong University, Department of Public Administration.
- 7/15/2008 "Theorizing Collective Action", Ateneo de Manila University Philosophy Department, Ateneo de Manila University, Lecture.
- 6/9/2008 "Environmental governance in a network age", Environmental Science Program, USC, Lecture.
- 4/16/2008 "Learning and Resilience", Resilience 2008, Resilience Center, Panel: Learning and resilience, Stockholm, Panel presentation. Refereed.
- 6/28/2007 "Unflattening the World", Thesis 11 / Budhi Philosophy Conference, Chulalongkorn University, Bangkok, Talk.
- 4/16/2007 "Building a Theory of Collective Action Upon an Ethic of Care", Oxford Said Business School, Oxford.
- 9/5.2006 "Foucault and the reform of the regulatory state", Ateneo Philosophy Department, Ateneo de Manila University, Lecture.
- 8/14.2006 "New institutional designs for intractable policy problems", Inst of Urban and Regional Development, UC Berkeley.

AWARDS

- 2006 Recipient, Daniel Stokols Award for Interdisciplinary Research.
- 2006 - present, Editorial Board, Budhi: A Journal of Ideas and Culture.
- 2006 - 2008, Board of Directors, Communities for a Better Environment.
- 2004 Prize, runner-up for best paper for "Polymorphic Structures of Risk Cognition," 2004 UC Toxics Research and Teaching Program conference, San Diego, CA.
- 2002 - 2007, Research Fellow, Community-Based Resource Management Center.
- 2002 Horwood Prize for best paper in information systems technology for "The Boston Industrial Archeology Mapping Project," awarded by URISA.
- Pacific Rim Fellowship (University of California, Los Angeles).
- Anthony Earle Fellowship (University of California, Berkeley).

RECENT / ONGOING PROFESSIONAL COLLABORATION

• Disaster Risk Reduction in the Western Pacific (WHO)

Partnership with the World Health Organization on creation of policy instruments for risk preparedness in regional hospitals and other critical facilities, and post-disaster socio-environmental impact assessments. Assessing vulnerability and resilience.

• Sustainable Development and Multi-Industry Clusters (DoA, NEDA)

Consultancy for the Philippine Department of Agriculture and National Economic

• Participatory Planning for Environmental Justice (CBE)

Joint design and implementation, with Communities for a Better Environment, of a participatory action research initiative to study and intervene in environmental justice issues.

• Urban Barrio Collaborative (CSUF)

Collaboration with the California State University Fullerton, El Centro, and the Kennedy Foundation in developing pro-community urban movement in Santa Ana, CA.