Global Epistemologies: Concepts, Methodologies, and Data Systems

For a Global Social Science

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Keywords: theory, methods, global

https://doi.org/10.1525/001c.11649

Global Perspectives

Vol. 1, Issue 1, 2020

Social science has not kept up with globalization. While the scale and scope of global interactions have increased exponentially (literally), the unit of analysis for much of social science remains at the national level at the highest. That is, while the world around us assumes a different shape, we continue to study it using arguably outdated scholarly foci. To develop a global perspective, we have to reorient ourselves to a new level of aggregation.

Essentially, all social science is interested in the process through which individuals combine to form more complex, organized wholes. Today, with globalization, we have created an unprecedented level of organized, complex aggregation. The number and types of nodes and the different links between them now form a three-dimensional spiderweb across the globe. How to study it?

To begin with, we must understand that size does matter. Consider, for a moment, the difference between millions, billions, and trillions. A million seconds take up roughly eleven days; a billion, over thirty years; and a trillion, three hundred centuries. Now imagine how one could possibly apply the methods of studying the smaller number to phenomena involving the much larger numbers. If you consider the possibilities of interactions between individual units, the scale is truly exponential.

The intellectual founders of social science could (with an impressive cognitive leap) comprehend social movements and stages at these high levels of abstractions. But, as the number of interrelated processes increases and as the possibility of organized complexity and emergence becomes likelier, the bounded rationality of even the greatest thinker imposes greater and greater limitations.

Let us take social media as an example. Karl Marx might well have predicted the role of capitalism in generating perceived needs, Emile Durkheim might have noted the rise of a new form of organic solidarity, and Max Weber might even have predicted how digital charisma would help shape politics. But could any of them have predicted or even comprehended how massive this phenomenon has become or how short a time it has taken to become the global web that it is? It is impossible to predict the effect or influence of a single tweet or tweeter from the characteristics of the individual message or the person who posts it. The analysis of social media increasingly relies on perspectives that draw more on theories taken from animal behavior studies than from any social science.

How do we begin to understand the impact of this increase in the scale and the scope of human interactions? How do we begin to understand what might be a ‘global’ social fact? What methods and what data (quantitative or qualitative) should we use? We have thought of a few broad issues where social science’s focus on a truly global perspective might be improved through the dialogue made possible by this new journal. These are merely suggestions for how to approach social science from a global perspective, but we hope they might inspire authors to think in new ways.

METHODOLOGICAL INDIVIDUALISM

Methodological individualism (MI) has largely dominated methodological advances in the social
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sciences for the past two decades. Originating in economics, MI has become standard in political science, but less so in sociology. One could say that the ‘experimental turn’ is the ultimate expression of this approach. But it would seem obvious that MI cannot begin to address the interactions involved in a global arena. What might be an alternative?

One possible solution is the analysis of systems. Complex systems form the backbone of our increasingly interconnected and interdependent society. What were once local economies, socio-ecological systems, and supply chains are now becoming rapidly globalized, and they depend ever more on coordination across spatial and temporal scales (Centeno et al. 2015; Guillén 2016). Each component in such systems connects with countless other components, creating a web of interactions that is self-organizing, not centrally controlled, and susceptible to nonlinear responses to change.

To unify the study of systems across academic disciplines and operational domains, we might use the concept of networks as a tool and as a metaphor. This concept could be universally employed across disciplines, and it provides an insightful level of abstraction for understanding the underlying mechanisms of systems without losing the important characteristics of the whole system. Other tools like flow models and coupled ordinary differential equations exist, and we welcome all methodological innovations.

How to study these networks? Once a single systemically integrated global human interaction network emerged in the nineteenth century (when the Europe-centered system enveloped the East Asian system), there was only one ‘case’, and so the quantitative study of changes in the whole system must use changes over time in variable characteristics or examine subsystems that are not autonomous. But whole autonomous systems can be studied comparatively if we go farther back in time, because there were smaller regional autonomous systemic interaction networks. Studies of sociocultural evolution using an anthropological framework of comparison (comparing interpolity systems of Stone Age nomadic hunter-gatherers with larger and more hierarchical systems as larger trade networks and imperialism emerged) must necessarily focus on interpolity interactions because upsweeps of greater complexity and hierarchy were often caused by processes that cannot be understood by focusing on single polities as if they were unconnected with other polities.

Chase-Dunn and Hall (1997) reconfigured the world-system perspective that emerged to study the modern Europe-centered system by making some of the theoretical concepts more flexible. This enabled comparisons between spatially small world-systems and medium-sized regional systems and the now global world-system of today. Chase-Dunn and Hall (1997) defined world-systems as systemic interaction networks that link settlements and polities in reciprocal interaction networks that conditioned the reproduction and change of local social structures. The word world here refers to the world of systemic interactions (exchange, warfare, diplomacy, communication, intermarriage, etc.) that reproduce the social structures and institutions of human groups. In this sense, worlds were small when transportation and communication technologies imposed a tyranny of distance that constrained the consequences of interaction to relatively short distances. These were the small social worlds in which people lived. (See also Chase-Dunn and Mann 1998; Chase-Dunn and Lerro 2017.)

What are additional ways we can understand global flows of, and interactions among, people and/or goods? Global cities—those that are financial command-and-control centers around the world, like New York, Tokyo, and London (see, e.g., Sassen 1991)—have been extensively studied and are central to our understanding of how global inequality is perpetuated on the ground, in the political economy and spatially (see, e.g., Brenner and Keil’s 2006 reader on global cities). So, too, have scholars across disciplines examined the dynamics within and around borderlands, such as those borders that characterize

1 The term evolution still requires explanation. Here we are discussing sociocultural evolution, not biological evolution. Social science can discover the causes of changes in the degree of complexity and hierarchy of human societies without taking a position on whether this has been a good or a bad thing. Ideas about progress and regress are important matters of values, but they need not be settled to know the causes of patterned social change.

2 The term settlement includes camps, hamlets, villages, towns, and cities. Settlements are spatially bounded for comparative purposes as the contiguous built-up areas.

3 We use the term polity to generally denote a spatially bounded realm of sovereign authority such as a band, tribe, chiefdom, state, or empire.

4 The important insight is that all human polities have systemic interactions with their neighbors, so it does not make sense to study them one at a time.

5 These changes in scale are being studied by the Settlements and Polities (SetPol) Research Working Group at the Institute of Research on World-Systems at the University of California, Riverside. The project website is at http://irows.ucr.edu/research/citemp/citemp.html. We use the population sizes of settlements and the territorial sizes of polities as quantitative indicators of scale and complexity.
the European Union, cities and travel across the US-Mexico border, or the contact among people in early North American history and its frontiers (e.g., Adelman and Aron 1999; Alvarez 1995). Both sets of research reveal the underbelly of global inequality and the mechanisms behind how it is created, perpetuated, and institutionalized. Yet we know much less about spaces of global inequality within countries beyond global cities and those cities alongside geopolitical borders. The concept of global borderlands presents a new spatial unit of analysis for understanding global life that addresses this gap (see Reyes 2019b). They are legally plural and ambiguous places of international exchange that are within nation-states and that are built on a foundation of inequality. They include places such as overseas military bases, special economic zones, all-inclusive tourist resorts, embassies, cruise ships, port cities, and colonial trading forts, among others. Within them, sovereignty is contingent, identities are continually re-created, and legal ambiguity shapes social life across contexts: from military agreements and tax laws to intimate relations, family formation, crime, work, and consumption. They are where international tensions arise, and they are the battle grounds of international politics. Within these spaces, we also see how traditional notions of sovereignty and territoriality are upended. From military agreements, tax law, and criminal court proceedings, we can see how territorial sovereignty—control over place—can be disentangled from administrative sovereignty, control over people (Reyes 2019a).

BIG DATA

Another major trend in the social sciences is the use of huge data sets and the relevant methods used to analyze them (e.g., machine learning). Interactions within the global web make for an outstanding candidate for this kind of work. The literally billions of daily transactions that make up globalization require this form of data analysis so as to find the hidden relationships that might be missed in ex ante theorizing. Much of this work requires a new direction in both data gathering and development of means of analysis using a multidisciplinary approach. One of the challenging concepts is the quantification of resilience: how do we organize and systematize data on such complex systems from global supply chains, finance, energy and infrastructure, food and agriculture, healthcare and computer networks, and potentially any large, globally connected complex networks that are at risk from failures as a result of shocks to the system equilibria, causing cascading failure events? We may also use this huge amount of data in a foresight program looking at the potential future drivers (e.g., climate change, new technologies, etc.) that will impact the global economy and the research and innovation policies and activities governments should employ to address them. Such a program requires a back-to-basics approach in terms of the epistemologies of future trends.

NOT MISSING THE TREES FOR THE FOREST

Not all methodological innovations are at the scale of systems. Global ethnography has traditionally been used to focus on “global processes, connections, and imaginations” and arose out of a critique of the Chicago School (Burawoy et al. 2000). In contrast to the Chicago School, global ethnographies in this vein are historical and contextual. These ethnographies have roots in the University of Manchester and the Manchester School of Social Anthropology. Contemporary global ethnographies following this tradition align with the Manchester/Berkeley approach, led by Michael Burawoy. Recently, however, a group of scholars have challenged and/or extended the Berkeley/Manchester School and are calling for new ways to understand how to conduct, and what constitutes, global ethnography. Reyes (2019a) argues, for example, that the difference between the Chicago School and the Manchester/Berkeley School is based on what Abend (2008) describes as different understandings of what ‘theory’ is. Furthermore, she argues that there are three distinct lessons from the Chicago School that are important for conducting global ethnography: (1) the centrality of the global to city life; (2) the specificity of place and people—that is, our writings should be rooted in the details of the people and places we study; and (3) its methodological and theoretical traditions, where drawing on classic Chicago School theories and methods while conducting global ethnographies provided much-needed scope conditions regarding to what extent, how, why, and under what conditions, for example, segregation or total institutions shape social life (see Garrido 2013 and Reyes 2018, respectively).

Similarly, Marco Garrido, Xuefei Ren, and Liza Weinstein (forthcoming) are spearheading a move toward what they are calling a “global urban sociology.” Using particular keywords—such as segregation, suburban, and evictions—that are ubiquitous in US urban sociology, they argue for the need to center urban experiences within and across the Global South. Doing so allows scholars to “open up” theoretical concepts, pushing forward our knowledge about how social processes operate differently across contexts and decentering the United States as a universal reference to understand urban life.

METHODOLOGICAL NATIONALISM

A global perspective, however, does not mean losing sight of agency and how actors maneuver within a complexly networked world. Size does matter, but not always as one presumes. Indeed, seemingly small and marginal places can, paradoxically, supply powerful actors with resources that enable them to further
establish their dominance. This phenomenon is seen most dramatically in the offshore world. Often trading on ‘symbiotic sovereignties’ (Palan 2002) or federated systems, places like the state of Nevada, the Cayman Islands, the city of London, the island of Jersey, and the state of New Jersey offer legal devices that separate juridical residence from physical presence, enabling actors—particularly corporations and the rich—to ‘structure’ their wealth in advantageous ways.

Citizenship, too, has become intertwined with this trend. Now more than ten countries offer formal citizenship through citizenship by investment (CBI) programs, which provide citizenship in recognition of an investment in or donation to the country. For between $100,000 and $2,200,000, wealthy individuals can naturalize in places such as Antigua, Cyprus, and Vanuatu in just a few months. What does membership in a microstate offer to the wealthy and powerful? The primary draw is not immigration rights but mobility. And this is typically not mobility to the state issuing citizenship but to other countries, such as those in the European Union, a mobility secured through treaties (Surak 2016). A nouveau riche Vietnamese businessperson, for example, can enter only forty-nine countries without a visa, which can make travel to desired destinations—such as Berlin, London, and Zurich in one trip—onerous. For the newly wealthy in emerging economies with authoritarian regimes, the draw is not only movement in the present but also the possibility of future movement. In such cases, a second citizenship becomes an insurance policy against an uncertain future. Business deals and banking can also be more easily conducted, depending on an individual’s citizenship. CBI, effectively, enables the wealthy to circumvent the limits of their citizenship at birth once it becomes a liability, so they can safeguard themselves and their assets (Surak 2020). Unpacking this transformation in citizenship requires not only tracing the global network of actors that create the market but also understanding sovereignty as labile and networked too, as are the rights that citizenship can secure. All of these factors allow those with means to enhance their personal mobility and flexibility within a complexly interconnected world.

When the nation-state is no longer ‘the natural social and political form of the modern world’ (Wimmer and Schiller 2002, 302) and the global itself is a social fact, we have an opportunity to consider, as part of our historical-sociological inquiry, the links and connections across territories. Interestingly, the intellectual roots of historical sociology—including Marx’s and Weber’s analyses of capitalism—are global in their orientation to a much greater extent than many of the more systematically comparative studies that they have inspired. No doubt, comparative and historical sociologists have offered—and still offer—valuable insights and lessons based on studies that use states as the units of analysis to be compared. But in that process, they inevitably ‘lost sight of the connections between...nationally defined territories’ (Wimmer and Schiller 2002, 307). As we discuss elsewhere in this introduction, the alternative embraced by other approaches, such as world-system analysis, is to treat the global as the preferred unit of analysis. One of the strengths of such a global approach is that it still allows us to consider the roles of states but without reproducing the state as the primary unit of analysis (Wallerstein 1974). Studies that are concerned with networks across nation–states—say, of human rights activists or of economic ideas—often treat the state in a similar fashion: they are unlikely to conclude that states don’t matter for a subject’s access to rights or for the shape of local knowledge, for example, but states and other ‘national’ factors are hardly the only determinants (Bockman and Eyal 2002; Dezalay and Garth 2002; Fourcade 2009). Other useful approaches ‘globalize’ not subjects but the states themselves—specifically, they identify and analyze connections across states. This is the main concern of the literature on interstate diffusion (Simmons, Dobbin, and Garrett 2007), in which states learn, mimic, or are coerced by others—either directly or with the mediation of international organizations—but in which states also resist, reverse, and make their own rules (Chorev 2012; Halliday and Carruthers 2007). Sociologists who study nation-states as part of empires help us not only to see the mutually constitutive relations between the metropolis and the periphery but also—in a way that other approaches find hard to achieve—to see the ways the boundaries of the state-as-container were drawn in the first place (Go 2016; quisumbing king, katrina 2019; Hammer and White 2018).

AN INVITATION

What is the appropriate unit of analysis for a global perspective? To what extent should we allow for idiosyncratic, nondeterministic accounts of the dynamics of the global web? What is the role of states versus other possible forms of governance? Do we need to redefine our models of causality in light of the overwhelming complexity of the new social world?

These are the issues that we hope future authors will consider.

AUTHOR BIOGRAPHIES

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Miguel Centeno is Musgrave Professor of Sociology and Vice-Dean of the Woodrow Wilson School. He has published many articles, chapters, and books. His latest publications are War and Society (Polity 2016), Global Capitalism (Polity 2010), States in the Developing World (Cambridge UP, 2017) and State and Nation Making in the Iberian World (Vol I, Cambridge UP 2013; Vol. II 2018). He is also finishing a new book
Christopher Chase-Dunn

Christopher Chase-Dunn is Distinguished Professor of Sociology and Director of the Institute for Research on World-Systems at the University of California-Riverside. He received his Ph.D in Sociology from Stanford University in 1975. Chase-Dunn has done crossnational quantitative studies of the effects of dependence on foreign investment, and he studies cities and settlement systems in order to explain human sociocultural evolution. His research focuses on interpolly systems, including both the modern global political economy and earlier regional world-systems. One project examines the causes of the expansion and collapse of cities and empires in several regional world-systems as well as the contemporary process of global state formation. His research has been supported by the National Science Foundation. Chase-Dunn is the founder and former editor of the Journal of World-Systems Research and the Series Editor of a book series published by The Johns Hopkins University Press. In 2001 he was elected a Fellow of the American Association for the Advancement of Science. In 2002 he was elected President of the Research Committee on Economy and Society (RC02) of the International Sociological Association. And in 2008 he was elected Distinguished Senior Scholar of the International Political Economy (IPE) section of the International Studies Association.

Nitsan Chorev

Nitsan Chorev is the Harmon Family Professor of Sociology and International Studies at Brown University. She was a Member at the Institute for Advanced Study in Princeton, Fellow at the Woodrow Wilson International Center for Scholars, and a Global Fellow at the UCLA International Institute. She specializes in the politics of globalization and neoliberalism, global health and foreign aid. She teaches on development, global and transnational sociology, comparative historical sociology, classical social theory, and contemporary social theory. She is the author of Remaking U.S. Trade Policy: From Protectionism to Globalization (Cornell University Press, 2007), The World Health Organization between North and South (Cornell University Press, 2012). Her most recent book, Give and Take: Developmental Foreign Aid and the Pharmaceutical Industry in East Africa, looks at local drug manufacturing in Kenya, Tanzania, and Uganda, from the early 1980s to the present.

Marilyn Grell-Brisk

Marilyn Grell-Brisk is a recent Ph.D. graduate in sociology from the University of Neuchâtel, Switzerland. She is an assistant research scientist at UC Riverside’s Center for Environmental Research and Technology (CE-CERT) in the Air Quality Measuring and Exposure Lab. Previously at UC Riverside, Grell-Brisk was a research associate at the Institute of Research on World-Systems. Her doctoral project focused on global economic stratification as it relates to the rise of China and its impact on various regions in the global South. She is trained in macro-comparative quantitative research methods and utilizes case studies and other qualitative research tools to draw out the complex connections that exist within the modern capitalist interstate system. In general, Grell-Brisk is interested in the transformation and development of middle-to-low income countries in the world-economy as well as the implications of global climate change and pollution in urban cities.

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Inoue’s Research and teaching interests are Comparative world-systems, Sociological Theory, Formal and Simulation Modeling, Comparative world history (especially East Asia, Central Asia, and Europe), global stratification, Quantitative and spatial data analysis, Ecological and spatial modeling of polity development, Application of network analysis, and Application of numerical computations. Inoue’s research examines the dynamics of social complexity (differentiation and hierarchy) formation in a long-run world-systems evolution. The research seeks to develop a generic yet realistic model that explains the dynamics of complex hierarchical structure of wide range of historical cases.

Paul Larcey

Paul Larcey is the Founder and CEO of bForm technologies, a company which is aimed primarily at the construction/infrastructure sector to optimize cost control of design complex construction projects through the detailed risk management of every element of the supply chain. Paul has held senior and board level positions in global Fortune 250 construction and engineering and technology companies, with over twenty years experience in the sector before becoming one of the founding partners of bForm Technologies. Having studied Engineering and Materials Science at the University of Oxford he then completed an MBA at Imperial College London in Corporate Finance. Paul has a keen interest in assisting the construction process to move to a more rigorous and methodological approach within an
achievable cost framework. In 2016, Paul completed his studies for a Construction Engineering Masters, a Cambridge University Master of Studies course, that is run by the Laing O’Rourke Centre. Paul has started a research group which is looking at risk perception in the financing, construction and operation of large scale infrastructure. Areas of interest are: Infrastructure, risk, financial systems, interdependency of engineering systems, complexity, cyber security.

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Victoria Reyes is an Assistant Professor of Sociology at the University of California, Riverside. She received her PhD from Princeton's Department of Sociology in January 2015 and was a 2016-2017 Postdoctoral Fellow at the National Center for Institutional Diversity at the University of Michigan. She previously taught in Bryn Mawr College’s Growth and Structure of Cities Department. In 2019-2020 she is on leave as a Postdoctoral American Fellow, funded by the American Association of University Women (AAUW). Reyes studies culture, borders, and empire. Her work is driven by the question of how to understand territoriality in the 21st century. Her book, *Global Borderlands: Fantasy, Violence, and Empire* is published by Stanford University Press and her work has been published in *Social Forces, Ethnography, Theory and Society, City & Community, Poetics,* and *International Journal of Comparative Sociology,* among other outlets. She’s also written for the Monkey Cage at the Washington Post, The Conversation, and Inside Higher Ed. She’s received fellowships, awards, and/or grants from the Institute of International Education, the National Science Foundation, American Sociological Association, National Center for Institutional Diversity at the University of Michigan, National Women’s Studies Association, Law and Society Association, Hellman Fellow Funds, and American Association of University Women, among others.

**Kristin Surak**

Kristin Surak is a Senior Lecturer in Japanese Politics at SOAS, University of London and a Fung Global Fellow at Princeton University. Her research on international migration, nationalism, and political sociology has appeared in leading academic and intellectual journals and has been translated into a half-dozen languages. She also publishes in popular outlets, including the London Review of Books, *New Left Review,* and the Washington Post. Her book Making Tea, Making Japan: Cultural Nationalism in Practice (Stanford University Press 2013) received the Book of the Year Award from the American Sociological Association’s Asian Section. The American Academy of Political and Social Science has recognized her scholarship, which has been funded by the German Science Foundation, Japan Foundation, Fulbright-Hays Foundation, and Leverhulme Foundation, among others. She has been an invited fellow at the Institute for Advanced Study, Princeton; Clare Hall, Cambridge University; and the European University Institute. She comments regularly for the BBC, Deutsche Welle, Channel News Asia TV, and Sky TV News. Her current research investigates the origins and spread of investment migration programs and the global interdependencies that have advanced them.
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