The New Quantitative Revolution

In "Spatial Science and Quantitative Analysis in Geographical Curricula," Ron Johnston, Richard Harris, Evelyn Jones, and David Malley endeavor to re-place geography's Quantitative Revolution in response to the "quantification of the discipline's critical social-theory tradition that [had been] misrepresented as spatial science, Johnston et al.

Responding to a critical social-theory tradition in human geography that was refined through opposition to a particular strand of geography in its quantitative and positivist guise that emerged in the 1960s," (Cresswell, 2013, 281) Johnston et al. analyze how pervasive misrepresentations of quantitative analysis that undermine the coherence of human geography as well as the potential of discipline to engage with broader issues of theory and policy, Johnston et al.
and its potential...

as well as its role "in the formation of an informed citizenry in data-driven, evidence-based policy societies." (p.31).
Our curriculum and our disciplinary histories, Johnston et al. tell us, have left us with a deceptive caricature of quantitative analysis and spatial science.

Inherited from the past -- a regime of quantitative spatial science -- provided an essentially positivist, mechanistic, "view from nowhere." Mechanistic models of home economics that ignored context, contingency, the deeply contextual human contingencies of human behavior. Contemporary spatial science, Johnston et al. argue (p. 3), actually emphasizes similar general arguments to those applied by scholars in the disciplines of "social theory," "companion," "development" in public policy, analytical technologies, and "Big Data." Massive flows of "Big Data" are rapidly enabling new ways to transcend the "quantitative vs. qualitative" divide, Johnston et al. suggest, presenting us with unprecedented opportunities and obligations: contemporary spatial science -- "as correctly practiced and not as pioneered fifty years ago" -- merits a place as "a core component of all undergraduate degree curricula and a key resource on which all postgraduates might draw." (p. 15).
Johnston et al. have given us an extraordinary contribution. This is a wide-ranging panoramic survey of the legacy of half a century of innovation in spatial science -- a legacy they have described as both a catalyst for change.

Their "case (plea?)" that qualitative spatial science "should not be denied students" presents (p. 16) the choice to study curriculum struggles in an era of overwhelming institutional and technological change. Concern with nearly all of these Johnston et al.'s interpretations, although the emphasis on spatial practice and recommendations, although I must emphasize that I am thoroughly unqualified to advise on curriculum students, is quickly disappearing. The implications of this replacement are enormous.
It is in your rational self-interest for an educational system in which the audit culture is quickly destroying the conditions of possibility for uncommercial free thought and independent scholarly knowledge production (unless you want to stop reading, because “reading” counts for nothing on your periodic performance assessment, and your grades are unlikely to improve). Nevertheless, I have an obligation to offer more than a simple “I agree” in response to Johnston et al.’s related ideas.

New curricula for spatial science and qualitative analyses are being written in code, enmeshed in the application programming interfaces of neoliberal digital capitalism. Big Data neoliberalism and cognitive-cultural capitalism (Scott, 2011a, 2011b) transform education you, me, and every other human geographer...
Contextualizing Spatial Science

J. Johnson et al.'s manifesto is ripe for dissection, at once a richly detailed historiography of geography's quantitative revolution, and a contemporary pedagogical manifesto of brutal simplicity. Three steps: disciplinary fragmentation, logic is compelling: disciplinary fragmentation has given rise to widespread misrepresentations of spatial science.

The history of spatial science, obscuring the contemporary possibilities of qualitative geographies informed by critical social theory to engage wider publics of “an informed citizenry” in “data-driven, evidence-based policy solutions” (p.1).
Yet Johnston et al. achieve this compelling coherence by through a relentless focus on the pure, inherent scholarly merits of the quantitative curriculum, which has thoroughly transformed the education of knowledge production over the past generation.
This is a work written by geographical scholars for an audience of scholarly geographers, on the assumption that scholars retain authority over the content of the curriculum. Unfortunately, this important scholarly conversation takes place within a broader context of technocratic instrumental rationality, neoliberal axioms of consumer choice, and market metrics, all transforming education at an accelerating pace. One of the central elements of the neoliberalization of knowledge production involves "a ubiquitous quantification of every aspect of teaching, research, and service," and "the forced crunching of all intellectual activity into a number" (Smith, 2010).
First, he new geostatistical revolution involves qualitative transformations of quantitative data. The sheer magnitude and volume of new sources of data, and the growth rate of data production and distribution, merit new capabilities every year, every month. Complexity theory reflects practical challenges in the prediction of dynamic systems such as climate, economic and social systems (for example, Lutz, 2001), but also provides rapid decision-making capabilities for complex and dynamic systems. It creates what the science historian, George Dyson (2012) calls a "universe of self-replicating code." Dyson estimates the current growth rate at five trillion bits per second. In one sense, Johnston et al.'s contribution is a clarion call for geographical expertise; every professional geographer can instantly recognize the desperate need for spatial and temporal understanding of complex systems.
for careful, critical appreciation of the distinctive essence of spatial data, the art and science of cartographic communication, and the inferential challenges of spatial analysis.
There's an exciting, tantalizing market opportunity here --
for geographers to shape the emerging era of "computational social science" (King, 2009), and to demonstrate that analyze the rapidly-evolving spatiotemporalities of human communication in a socially-networked world (Shelton et al., 2012; Crayton et al., 2012).  Johnson et al.'s curriculum will prepare a new generation of spatial thinkers, a generation of students for life in this new world of ubiquitous Big Data, as more and more of it becomes explicitly spatial data.

Yet this new world of data is dangerous.  They cause a的历史, despite the best efforts of projects like the National Historical Geographic Information System -- and not just in ways that leverage the shallow view of the vast horizontal landscape of the desert of the present real, but also in ways that perpetuate new kinds of devalorization of past generations of knowledge.  In the attention economy of the data-rich present, meanwhile, data-induced pressures constantly raise the expectations with each new technological advance.
of audiences. Policy elites, students and
other consumers are overwhelmed with data, necessitating new learning cultures
that alternate between adaptive cynicism and voracious
demands for new interactive visualization experiences
to make sense of it all. Experience and cynicism, moreover, are
increasingly privatized and dehumanized in the ecosystems of corporate competition.
The social-theoretical challenges to geography's quantifiable revolution -- the period Gould briskly called the Augean Period from 1959 to 1979 -- were fought on the terrain of a methodological
positivism that portrayed data as a means of finding common
ground; the public arena was occupied by population censuses to provide these
embraced most clearly in the exercise of the
public, governmental population censuses
(Shearer, 2009; Steinmetz, 2005). As capitalists and
the political Right have learned to hijack post-positivist
poststructuralism, however, public sector data systems
have grown along with them.

While vast networks of proprietary, corporate digital fossiers enable truly revolutionary transformations in the nature
of observation. Because there are many market ethic possibilities, the evolutionary reasoning is the 
new world of social

Indeed, the construction of
those parts of the world where the 
existing path of neoliberalization

in those parts of the world shaped by the most
advanced developments in the evolutionary trajectories
of neoliberalization, it is almost impossible to
distinguish "public" data according to their
conditions of production.

accept the data policies of Google and
Facebook, spreading privacy and fairness
encourage policy debates on any governmental

are able to easily access
with policy debates over

have exploited these policy debates
of the governmental crisis in Europe
of productive and technological post-Fordism
(see Fuchs, 2008). New practices, Strange new
hybrids are emerging,
as Silicon Valley innovations and widespread social
networking now enable a synergistic
growth of corporate algorithms interacting with other
corporate algorithms --

occurred by the networking and spreading
patchwork

If you're reading these words, there's a scattered web of data points scattered across
deckstream data consisting of hundreds of
data points scattered across

The path that led you here,
consisting of hundreds of data
points on your digital reading history,
my digital authorship history,
and our shared correlations with

"digital individuals," in this evolving
world of socio-spatial data

(Carr, 1997)

(Lanier, 2010; Lanier, 2013; Carr, 1997). Given the
velocity differential between algorithmic
bots and human reading,

The "views" of this textual
content, and the differential will
grow exponentially over time.
Mobilization and Mapping

The second dimension of the new quantifiable revolution involves a process best understood as data mobilization:

- the simultaneous acceleration of a) the acceleration of circulation of data among individuals and institutions in place, wherever they happen to be, and b) the production of data streams representing humans in motion.

This trend is most visibly wind in the smartphone/app economy, where real-time locational data have quickly become the fuel for competitive advantage in an emerging fusion of GPS-enabled hardware and the embodied, place-based experiences of consumers in motion in their daily lives.

With social networks' economic pressures on Facebook to adapt Facebook's relations with advertisers and investors, we illustrate:

With a monthly active user base just over 1.1 billion worldwide.
and an average daily user online duration of 34 minutes, Facebook's servers handle a data stream of 34.9 billion minutes of human social relations each day. This torrent of data can be viewed as a Kantian temporal distortion. Each day, Facebook is given more than 64 thousand years of human expression in a digital form readily suited for advanced analyses that exceed the wildest mathematical hypotheses of the quantitative revolutionaries of the 1950s. Yet Wall Street investors have another perspective, and have been pressing Facebook ever since the firm's May 18, 2012, epic-fail IPO: Learn geography. To the degree that Facebook can turn its metaphorical data-mining algorithm into real, perpetual revenue, it needs to harvest all the potential of quarterly revenue streams generated by advertising.
to consumers in the qualitatively-optimized

experience, that partially automated

high-speed trading

classes will have a new,

unprecedented

understandable. Feller (1970), Good (1984),


is quickly becoming the latest intellectual
equipped field scope...
means of extracting surplus value through means of space-time manipulations. Widespread social networking, mobile advertising, and ever-evolving Wall Street infrastructures of financialization coalesce in derivatives of Haagerstrand's time-geography. The number of Facebook users who access the service's mobile version at least once a month is now 819 million, and mobile ads grew from near zero in the second quarter of 2012 to 41 percent of total ad revenue in the second quarter of 2013: "Facebook results elicited investor's" The New York Times reports, quoting securities analyst who distills the essence of earnings report: "This company is becoming more and more of a mobile company." (Goel, 2013).
of course, is only one of the expanding array of mobilized, spatially-referenced data streams enabling the neogeography and visualization challenges surveyed by Johnston et al. Johnston et al. suggest, "a secure background in qualitative analyses is necessary for an informed citizenry in a society heavily driven by numbers," and "data do not 'just exist,'" but are created and performed through evolving social and institutional practice. Mobilization has profound implications for Johnston et al.'s curriculum proposals, as public institutions and social scientists scramble to follow the lead of private corporations into the new frontiers of Big Data. As more public and private institutions become informational entities, much of which paths of individuals' constantly-evolving data trails will be observed, linked with other micro- or summary-level data, or replicated as part of a new credibility data ecosystem. What interests will be drawn from selective, partial, views of situations of technological recombination and social movements? As government corporations, government agencies, and grassroots social movements.
all face competitive pressures to participate in the emerging social point epistemologies of epistemology; how do we cope with the ubiquitous explosions of Heisenberg uncertainty in the "cognisphere" (Hayles, 2006)? One way to reconcile the breathtaking analytical possibilities demonstrated by Shelton et al. (2012) and Compton et al.'s (2012) spatio-temporal analysis of Twitter feeds with Castells' (2012) portrayal of social media social movements as esthetic autonomous collective actors constituted through "networks of neural networks," is to hypothesize separate vantage points for observation of the reality of any given social movement through space and time. Yet these "realities" change at a rate determined by such factors as the slow pace of individual human cognition and understanding. And everyone now understands that realities cognisphere realities are up for grabs; the first step is first steps in any social movement now.
Social media strategies are typically the first step for any social movement, and these are fast-growing industries for online reputation management, data protection, search engine optimization, click fraud, and all sorts of other international performances that defy the old caricatures of naive positivism.

Objective observation of a passive external reality.
Big Data constitute algorithmic destruction of
the dichotomies of data production/distribution,
action/observation, production
and (at the extreme case
of generalized digitization of
human communication) subject/object
duality.

When mass popular collectives confront centralized, place-bound hierarchies of coercion, the fast performative realities of mobilized Big Data offer extraordinary emancipatory potential through “networks of outrage and hope” (Castells, 2012).
Neogeography, Big Data, and social media deliver pragmatism in real-time, through communication. “Events turn into objects, things with meaning. They may be referred to when they do not exist, and thus be operative among things distant in space and time, through vicarious presence in a new medium.” (Dewey, 1925 [1938], p. 386). Yet there is a simultaneous threat of dehumanization: the stunning efficiencies of automation and code require far fewer human geographers than yesteryear’s quantitative revolution. They themselves become obsolete while the infrastructure of algorithms, laws, and servers enables greater autonomy for digital individuals (Corry, 1997):

“Bureaucracies and intricate consummations as soon as they can be spoken of are liberated from local and accidental contest, and are eager for naturalization in any un-insulated communicating part of the world. Events when once they are named lead an independent and double life. In addition to their original existence, they are subject to ideal experimentations: their meanings may be infinitely combined and re-arranged in imagination, and the outcome of this inner experimentations –– which is thought –– may issue forth in interactive with wide or rare events. ... Where communication exists,
things in acquiring merely thereby acquire representativeness, surrogates, signs and implications, which are infinitely more manageable to management, more permanent and accommodating than events in their first estate." (Dewey, 1925 [1938], p. 386).
Student Big Data: The New T-Test

The third issue involves the role of data on the teaching and learning process itself in our current Gutenberg moment (Schwartz, 2013) of digital cultures of reading shifting dimension of the new qualitative revolution geographical knowledge production.
The first issue involves the \textit{definitional crisis} in our current curricular moment. Schafer, 2013, identified a new culture of reading and learning.

To understand the implications of the new curriculum that is rapidly becoming part of students' lives, consider a vision of Harvard offered by Gay King, a quantitative political scientist whose work on ecological inference has been catalytic.

In certain areas of geography (King, 1997, 2000; Anselin, 2000), in a presentation to Harvard's Board of Overseers in February, 2012, King argued that the competition for the resources of the University of Phoenix is the greatest threat to Harvard. He warned that for-profit universities, like the University of Phoenix, have no incentive to invest in their students or their curriculum. Instead, they are interested in \textit{research} for \textit{teaching}.

This situation is the result of a broader trend: institutions that are spending heavily in research and development on teaching, focusing on the direct benefits of teaching on students' future success.
“Meanwhile, seventy percent of Americans don’t get a college degree. You might say, ‘Oh, that’s really bad.’ Or you might say, ‘Oh, that’s a different clientele. But what it really is is a revenue source. It’s a enormous revenue source for these private corporations.” (quoted in Feller, 2013, 85).

In response, King advocates that online education be transformed from a dissemination function into something that treats the student experience as “a precious data-gathering resource.”

His logic is straightforward: “...we could instrument every student, every classroom, every administrative office, every house, every recreational activity, every security officer, everything. We could basically get the information about everything that goes on here, and we could use it for the students.” (quoted in Feller, 2013, 85). King’s presentation to the Overseers profiled in the New Yorker, sketched a clear image of what education might look like:

“A giant, detailed data pool of all activity on the campus of a school like Harvard, he said, might help students resolve a lot of the ambiguities in college life. ‘Right now, if a student wants to learn what I should do if I want to become an M.D.?— well,
what do they do? he asked. They talk to their advisor, they talk to some previous students. They get some advice. But, instead of talking to some previous students, how about they talk to ten thousand previous students? with enough data over a long enough period, you could crunch inputs and probabilities and tell students, with a high degree of accuracy, exactly which choices and turns to make to get where they wanted to go in life. He went on, 'Every time you go to Amazon.com, you are the subject of a randomized experiment. Every time you search on Google, you are the subject of an experiment. Why not every time a student here does something?'' (Heller, 2013, 85).

This is the new qualitative revolution. Harvard's response to the current rage for massive open online courses (MOOCs), and a wave of digital educational initiatives: Coursera, Udacity, the joint Harvard-MIT spinoff EdX, and of course the behemoth University of Phoenix. The U.S.'s largest university as measured by enrollment, with almost half a million students (Wilson, 2011).
King has developed an initial pilot test of digital "striped class" approaches (King et al., 2013a, 2013b), but the long-term vision is... A giant, detailed pool of all activity, derived from "instrumentity"... just for a moment.

Every student, every classroom... everything. Just for a moment. Set aside the conditions of possibility of "instrumentity" or measuring "everything" and turn instead to some generative duplications of meaning.

Now, bearing in mind the same number of data points on each student (about 1,500) that the marketing data firm Acxiom now has on hundreds of millions of consumers (Singer, 2012). What would it mean to resolve a lot of the ambiguities in college life with "inputs and probabilities" to "tell students, with a high degree of accuracy, exactly which choices and turns to make?"

Suppose the data tell us that it is the aggressive, selfish students who have the highest probability of "getting where they want to go in life."

Suppose the current black market off-label use of Ritalin and other "cognitive enhancers" on competitive university campuses (Landin, 2012) receives multivariate, randomized-trial validation, confirming that academic steroids...

If the past decades' " Ivy League - to - Wall Street pipeline is any guide, the "inputs and probabilities" will justify a comprehensive curriculum in exploitative financial alchemy (subprime mortgages and credit default swaps),
and economics and philosophy courses stripped of
any ethics or irony that might interfere
so that graduates are fully prepared
to advocate trillion-dollar financial-sector
bailouts financed through harsh austerity
measures on the poor and working class. The entire
King's manuscript for a giant, detailed pool of
all activity is reminiscent of Gould's (1981)
"Letting the Data Speak for Themselves." —

was designed opposite for a certain kind of data

torn away from the etymological
and ontological challenges of understanding
the meaning of a provocative;
the first time in data analysis

"It is, of course, absurd: incomplete data
can never speak for themselves, and we always
bring to bear some conceptual framework, either
intuitive and ill-formed, or tightly and formally
structured, to the task of investigation, analysis,
and interpretation. So let me confess that I choose
it to be deliberately provocative; and yet, like the
Theatre of the Absurd, there might be a deeper
truth underneath such a provocation. The title
could be profound. "

Gould 198 (166)."
It is profound. Big data, cognitive-cultural capitalism is fast reconfiguring geographies of education, re-scaling the time-space experiences of teaching and learning. The notion of algorithmic predestination places algorithmic predestination offered by King and others.

is code that risks destruction of the happenstance of learning, the unexpected discovery of new destinations.

Anthony Robinson, Penn State's

who is now preparing for a MOOC of “the world’s largest cartography class,”

discovered the field by accident like so many other geographers:

“...I started my undergraduate education as an electrical engineering major. Then I just randomly took a human geography class, and it completely woke me up. Right away I knew I wanted to be a geographer.” (F bigger Miller, 2013).
The essay uses analysis to argue that artificial intelligence is transforming education. The author highlights the use of AI in grading essays, identifying compliance issues, and monitoring student behavior. The essay concludes by emphasizing the ethical implications of AI in education and the need for careful consideration of its impact on student privacy.
evaluates students' writing against an ever-expanding database of billions of documents, using algorithms originally designed to detect rogue humans in large databases of brainwaves (Barron, 2008, p.18). Turnitin.com's parent company Paradigm, LLC, also markets a similar service for graduate students, institutions needing to verify the originality of work by graduate students, postdoctoral researchers, college and university faculties, or any other human content provider, merely digitized guilty-until-prove-innocent treatment. Several court decisions rejecting students' challenges to Paradigm's practices have established clear precedents for the emerging laws of this new qualitative revolution. If geography's heritage is the heritage of scientific explanation (Harvey, 1969) is retrospectively understood as a search for the laws of spatial organization (Atter et al., 1971) in the spirit of social physics, the new era of automated postpositivism is governed by laws of a different sort. The new contingent geographies of MOOCs and social media ubiquitous social media...
are rescaling Hagerstrand's
time-geographic constraints
and Tobler's infamous first law of
geography into a
world of internet connectivity
and micro-surveillance of stolen keystrokes,
entwined in legacies fields of
EUAs, copyrights, patents, trademarks,
and all the other legal force fields of
digitized intellectual property.
Opening Scene of the Revolution: ‘Question Every Assumption’

In a personal/intellectual history of geography’s quantifiable revolution, Susan Hossen (1994)
This re-placement entails an engagement with the history of the Revolution.

A re-evaluation of the history of the Revolution.

A re-evaluation of the place occupied by the revolution in the disciplines' history, and the current position of the revolution's methods in higher education curricula.

A re-consideration of
“Every time you go to Amazon.com, you are the subject of a randomized experiment. Every time you search on Google, you are the subject of an experiment. Why not every time a student has done something?”

Gray King (quoted in Haller, 2013, 85).

“The structure, the geometry, of the intellectual space called geography has changed and sharply increased in multidimensionality.”

(Gold, 1979, 145)

“The ferment of ideas was fierce; hypotheses were tested, provisions traded, models proposed, theories suggested, explanations offered, systems simulated, and laws sorely sought after. Reality was reached in search of theory.”

(Smith, 1979, 356).
"We could do this at Harvard," King explained, in a way that could measure the educational experience in place in unprecedented detail.
Agreement also appears simple.

Moreover, agreement may be redefining the very qualitative/quantitative divide. Johnston et al. rightly question: In the all-administrative university (Ginsberg, 2011) that seeks to exist where every educational activity must be where accounting, where every educational activity most appear in accounting register to secure maintainability.

Where educational activities are now constrained by the reputation designer to_base

Where an audit culture promotes as measurement now functions as structural constraint the opportunity costs of time and attention mean that any endorsement of qualitative methods, spatial science, and GIS science will be perceived as denigration or disinvestment from their methodological others' qualitative humanities, ethnographic.

—as core components of all undergraduate degree curricula” (Johnston et al., 15).
I am torn apart by such choices, and if you're reading these words you're too -- because
the essence of my dialogue in human geography is a pluralist spirit of "both/and" engagement that avoids the contentious battles of "either/or" (Barnes, 2009).
As an alternative, therefore, I’ll offer 
drawing a cautionary note based on the broader context 
of the curricular principles advanced by Johnston 
et al. (2007) and others have argued 
that contemporary political economy, and the 
mobilization of powerful institutions seeking to 
transform the role of education in society, 
are driving a new qualitative revolution. 

The revolution is advancing 
most rapidly in evidence-based policy 

societies 

Those societies 

political circumstances 

where 

defensive elites have managed 
to disguise infrastructures 
of policy-based evidence manufacturing 
behind a facade of 
“evidence-based policy” 
(Slater, 2009). Their 

strategies have included 

After generations 

of neoliberalism 

and commodification, this 

co-optation is 

now entering a phase of 

consolidated automation.
negotiated through critical

put into a critical, constructive engagement with half a century of innovation in critical social theory.
Geography has become means and ends in this curricular creative destruction, constituting a new quantitative revolution. Three dimensions of this revolution merit caution as we consider how to put Johnston et al.'s recommendations into practice. The first aspect is the magnitude of new data wares; the second is the rise of mobile data; the third involves the adoption of intensified deployment of qualitative and quantitative in the enterprise of geographic education itself.
and lastly

 forgive King for the preposterous presumption
 that "where you want to go in life" is an
 exogenous variable; for a moment, just
 consider the implications a few years from now
 when Harvard might have

 G
Accelerating velocity has begotten simultaneous shifts in the productive relations of data, as an evolving galaxy of corporations and screen-scraping bots.
devastating, coercive restructuring of education to serve the needs to conform to the imperatives of an increasingly unstable, short-term short-term, unstable waves of innovative commodification in contemporary cognitive-cultural capitalism (Scott, 2011a, 2011b).
the non-military public-sector data systems refined in the
era of the Keynesian welfare state are being
destroyed.
to map the imaginative and performative landscapes of “hacker cartography” (McConchie, 2013) and newly-geocoded economic solitudes economic landscapes (Walker, 2013).
all nourished by new streams of data
new streams of data from new kinds of devices and service transactions and new synthetic representations of traditional data. New streams of data, or metadata. The scholarly communication at the heart of knowledge production in geography and other fields is now also deeply embedded into corporate data systems and algorithmic analysis (Schooraman, 2013).
according to the public, democratic control of
to its production and use.

the data politics of partially automated
”Siren Servers” (Lanier, 2013) of Google,
Facebook, and Twitter have supplant the policy
debates of the governmental census
of Fordist methodological positivism
(Steinmetz, 2008).
Yet what can it mean to ‘take a course’ with 29,400 other students? All the new possibilities -- you can imagine Guild creating dynamic mental maps and teaching preferences interfaces between the responses of students in the class doing lots of his familiar localised preference surveys to create dynamic mental maps of the collective geographical imagination of the class -- will flourish for exactly one generation, whereas the unprecedented flood of precise detailed MOOC data yield unprecedented precision in the measurement of pedagogy, student engagement, learning outcomes, and elasticity of market demand: it will be possible, administratively possible, irresistible to identify the best case study, professors, and to dispense with all the other mediocrity wankers. Such rank-rook practices are already standard procedure in many
competitive enterprises, and the new frontier of struggle involves questions of how to define ‘best’ in a way that yields a single, unambiguous dimension of rank order.

The neoliberal noosphere of competition and market metrics has suppressed the material “multidimensionality” (Gold, 1979, p. 148) of being a human geographer of geography even as multidisciplinary analytical methods have continued to expand. The multidimensional analytical frontiers of human geographies (many of them now mapped by data-mining routines and bots) have continued to expand.
will offer catastrophic revelation to
(a current estimate of)
As the new quantitative revolution of post-employment educational automation removes lower runs of the job ladder for aspiring scholars of the MOOCetariat, studentized Big Data and dispersed teacher/student geographies non-Euclidian, post-Cartesian teacher/student geographies create new market opportunities in suspicion ad surveillance. At MOOC scale, there is only one means of ensuring that “taking a course” is not subjected to the same radical contingency that Facebook or means that Facebook has inflicted on “friend: trust none, and monitor as much as possible.
velocities mediated by code that quickly and constantly aggregates millions of separate decisions, communications, actions, and reactions; such processing speeds
and there are fast-growing industries for
online reputation management (creating demand
for new kinds of vetting by
online private investigation
services), identity theft (identity protection
services),


