The Future of Quantitative Sociological Research: a 2016 perspective

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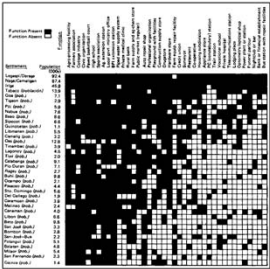Conseil de recherches en
sciences humaines du Canada

•Sylvia and I are teaching the Applied Social Statistics course (SOCI 424) and the Graduate Quantitative Methods Seminar (SOCI 612) at the same time during the week (Thursdays 10 to 1) and we are thinking about organizing a joint round-table on the Future of Quantitative Sociology for one of our last sessions (March 31). We would like to invite you to participate. If available and willing (we hope you are!), we would like you to make a short presentation of no more than 15 minutes on this topic. We are thinking about having three participants and, of course, keeping some time for the discussion.

- Materials
  - IBM punch cards
  - Spirit Masters (Xerox photocopiers introduced in 1959)
  - Fax (1964 – first commercially available Fax machine)
  - Commercialized Internet (1995)
- Quantitative research depended on calculators (my first were not electric)
- Clever approaches to more complex types of analysis: e.g. scalogram analysis

Instead:

▸Anticipate possible futures
▸Explore their implications

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To anticipate the future(s), consider the past

- Number systems and algebra: commerce and construction
- Calculus: changing systems – cannonballs, transportation, fluids
- Demography: population, governance , and markets
- Probability: gamblers, industry (production, decision-making , risk-taking (nsurance and pharmaceutical industries)
- Cryptography: wars , market protection, and privacy
- Experimental design: Agricultural production, pharmaceuticals, economics
- Systems theory (modern ~ 1950s) – electrical systems

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To anticipate the futures, consider the past

•As social scientists we know that new ideas and the development of those ideas do not emerge in a social or historical vacuum.

•Often emerge as a result of pragmatic problems.

•The direction(s) in which they develop are often influenced by practical concerns and those people and institutions that control resources and time.

•It is informative to consider a few of those associated with quantitative analysis (same for qualitative)

•Number systems and algebra: encouraged by commerce and construction (Babylonia, Egypt, Greece, etc.)

•Calculus: encouraged by ballistics (Galileo and Euler) and changing systems (e.g. transportation, electricity, fluids, and space exploration)

•Moved from the analysis of static phenomenon to dynamic

•Demography: encouraged by governments interested in their populations (for taxes, defence, and control), the management of health (epidemiology), and more recently – market identification and influence

•Probability: encouraged by gamblers, industry (for error estimation in production, decision-making in administration, and risk-taking – in insurance and pharmaceutical industries)

•Cryptography: encouraged by wars, market protection, and privacy protection (e.g. Internet)

•Communication and Information theory: (Shannon 1948) – has provided strong incentive for developing protections for communication in general

•Experimental design: encouraged by agricultural production (e.g. Fisher), pharmaceuticals, and economics (game theory)

•Systems theory (modern ~ 1950s): encouraged by the challenges of complex electrical systems, weather prediction, biological systems, and lately – climate changes

•50-year research futures are likely to be heavily influenced by money, industry, and crises.
  •Examples of social-focused questions
•Money (business and finance)
  •Market research, decision-theory, and population analysis
  •How can we better use huge data sources?
  •How do individuals make purchasing decision?
  •How do individuals' social networks influence their decisions? (note individual bias)
•Industry
  •How can we better manage our employees?
  •How do we manage hostile social environments?
  •How do we better communicate to our potential markets?
  •How do we better influence government to meet our objectives?
  •How can we protect our assets and communication from negative social and institutional challenges?
•Crises
  •Social unrest (war, terrorism, demonstrations, crime)
    •How do we minimize the negative impacts on our populations and government?
      •Best strategies for war, terrorism, etc.?
  •Social inequality and its effects
    •What are the social and individual impacts of social inequality?
    •How can we reduce social inequality?
    •How can we mitigate the negative effects of social inequality?
  •Social service provision
    •What are the most effective ways to organize health, education, welfare, law?
    •How can we best deal with an aging and more mobile, socially diverse population?
  •Climate and environment
    •What are the most likely social consequences of climate and environmental changes?
    •How can we mitigate the negative effects of climate and environmental changes?
    •What social programs are most likely to reduce the negative impacts on the environment?

Qualitative/Quantitative distinction not useful

‣ Qualitative researchers make quantitative claims
‣ Quantitative –based results are used for qualitative claims
‣ The two approaches will be even more integrated in the future
‣ Need to be well trained in both in order to:
  ◦ Use them appropriately
  ◦ Be appropriately critical

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The qualitative/quantitative distinction is not useful and is becoming less so.

•Most qualitative researchers liberally use more/less, greater/smaller, increasing/decreasing in their claims and conclusions – all quantitative claims that imply quantitative evidence (whether numbers or not).

•Quantitative results are used for many qualitative claims

  •Population changes are more important for crime than laws.

  •Women continue to be disadvantaged.

  •Colonialism has undermined the culture of indigenous people in Canada.

•Our methodological tools and approaches are integrating the two frameworks and will more likely do so in the future.

  •Google algorithms for identifying your characteristics, preferences, and dislikes.

    •Quantitatively based, qualitatively articulated, and include both quantitative and qualitative representations of the results.

  •Document analysis (e.g. identification of themes) much more sophisticated than 20 years ago

    •AI drives the analysis well beyond word counts, word juxtaposition, and sentence analysis.

    •The use of the Internet for identification of criminal behaviour and markets has driven this analysis far beyond what most of us at Concordia can manage. We need to improve our skills to see what it holds for social analysis reflecting our interests.

  •Complex systems analysis is ideally suited for the complexity of social systems but the number of social scientists who are using these tools (let alone developing them) is relatively minute.

    •Community simulations: e.g. Old Crow community in the Yukon (http://pubs.aina.ucalgary.ca/arctic/arctic57-4-401.pdf). With the help of the local community they designed a simulation model including cariboo herds and transportation links then explored various scenarios based on potential community choices.

    •Crowdsourcing data collection and/or analysis: e.g. Danish communities developing their own database for anticipating and planning objectives.

What are appropriate strategies?

•Learn the skills

•Monitor who controls the data and tools

•Divert/co-opt less attractive objectives

•Learn the language

•Reuse data

•Redefine frameworks (individual to social)

•Support Open Access

•Champion the freedom to criticize

Be Nimble!

‣ Learn a wide range of skills and capacities

‣ Dabble and explore outside your comfort zone

‣ When is doubt – Ask someone to help

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•In sum: be nimble and in order to be nimble, you need the skills and capacities to respond to the exciting surprises that are bound to emerge in your lifetimes.

   •Learn a wide range of skills and capacities

   •Dabble and explore outside your comfort zone

   •When is doubt – Ask someone to help

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