Energy social science research design for maximum impact

Invited Presentation to the North China Electric Power University, Beijing, China, October 15, 2019

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Overview and preview

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- Some mind-boggling professional statistics
- What is novelty?
- What is rigor?
- What is style?
- Implications for you in this very room
- Some thoughts and suggestions for research impact

The source for almost everything in this presentation, at least the first bit, is: Sovacool, BK, J Axsen, and S Sorrell. "Promoting novelty, rigor, and style in energy social science: Towards codes of practice for appropriate methods and research design," *Energy Research & Social Science* 45 (November, 2018), pp. 12-42.

Boggling the mind

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- *Elsevier, the top academic publisher, receives 1.2 million submissions a year*
- *365,000 are accepted, adding to 12.6 million articles available*
- *700 million downloads, 11 million researchers across 120 countries*
- *30-90% rejected (average around 82%)*
- *My own 20-70-10 rule*

Boggling the mind

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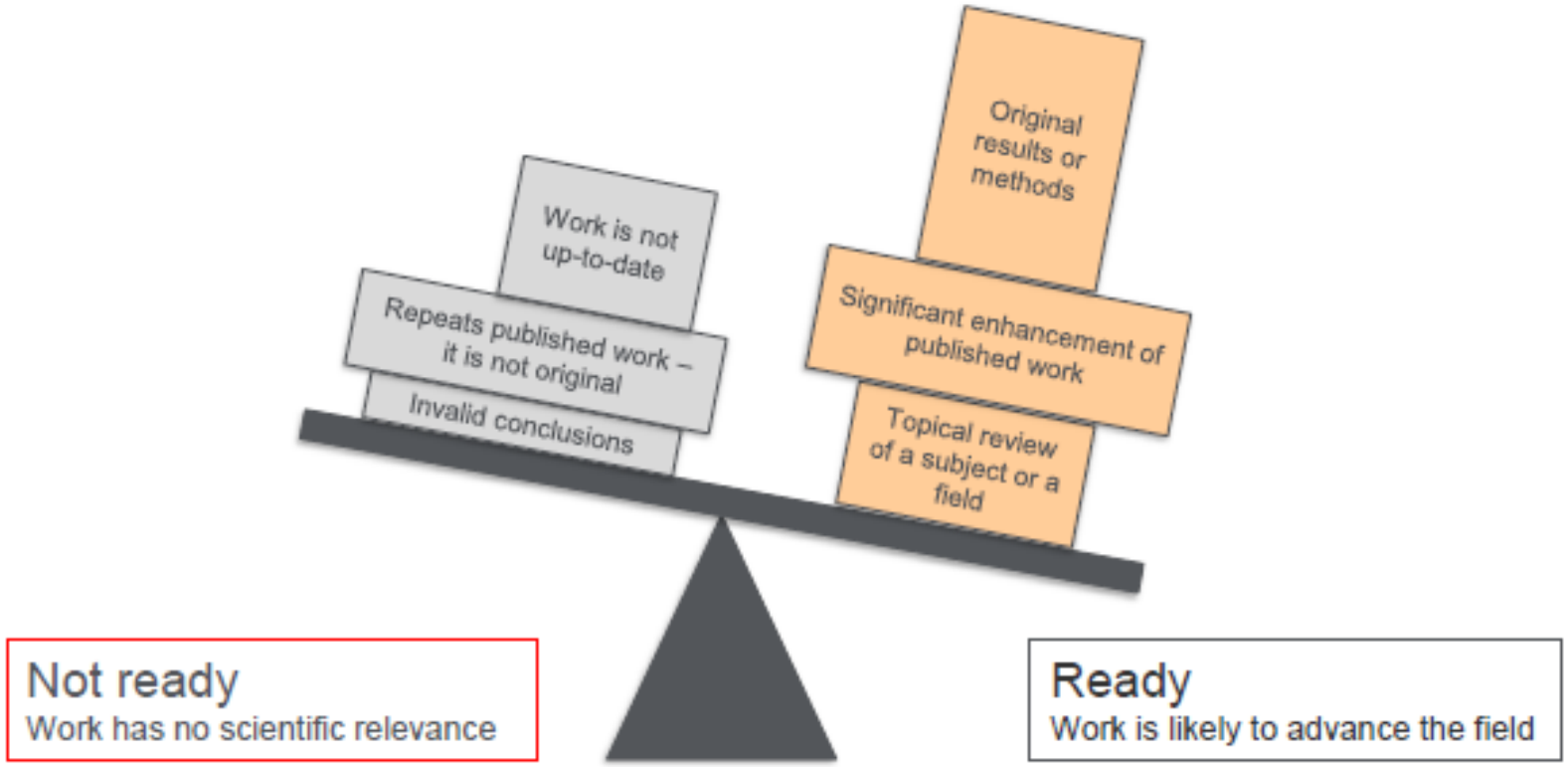

- *A lot of garbage is submitted!*
- *But, it also makes excellent articles much easier to spot*

How do we get better (myself included)?

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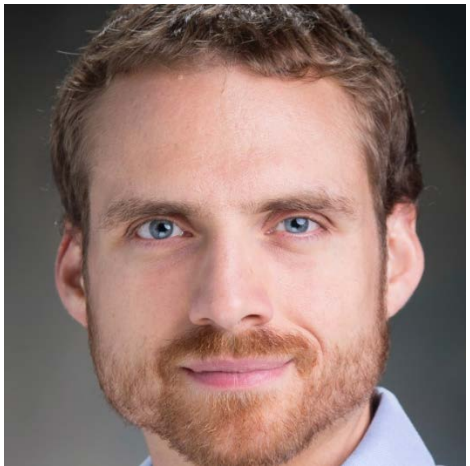
- *Bring attention to the importance of clearly articulating research questions, objectives, and designs*
- *Provide a framework for conceptualizing novelty*
- *Suggest codes of practice to improve the quality and rigor of research*
- *Provide guidelines for improving the style and communication of results*



The mechanics of (most) strong articles

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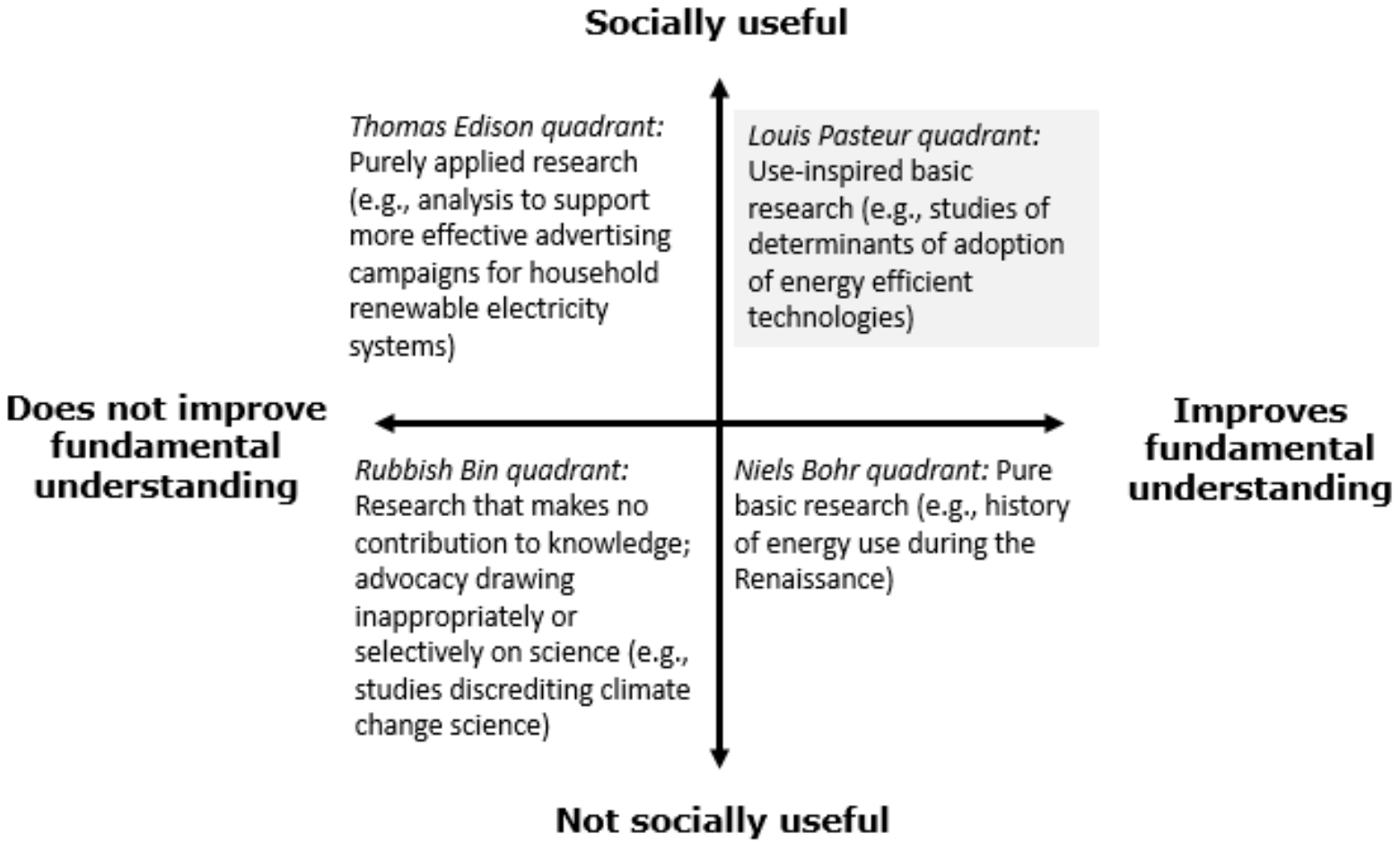
Ask a socially relevant, interesting, answerable research question



The mechanics of (most) strong articles

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- *Engage with/recognize theory and conceptual frameworks, sometimes advance them*
- *State research aims or objectives*
- *Explicate a specific research design, methods working on concert to achieve your objectives and answer that question*
  1. *Experiments and quasi-experiments*
  2. *Literature reviews*
  3. *Surveys and quantitative data collection*
  4. *Data analysis and statistics*
  5. *Quantitative energy modelling*
  6. *Qualitative research*
  7. *Case studies*

	Positivism	Interpretivism	Critical realism
Ontology	Independent and objective reality	Socially constructed reality	Objective, stratified reality consisting of surface-level events
	Causality indicated by constant conjunctions of empirical events	Multiple realities possible	Real entities with particular structures and causal properties
Epistemology	Knowledge generated by discovering general laws and relationships that have predictive power	Knowledge generated by interpreting subjective meanings and actions of subjects according to their own frame of reference	Knowledge generated by process of "retroduction," used to create theories about the entities, structures and causal mechanisms that combine to generate observable events
	Emphasis on prediction	Emphasis on interpretation	Emphasis on explanation
Methodology	Specific, deductive hypothesis-testing. Emphasis on generalizability. Quantitative methods, such as experiments, surveys and statistical analysis of secondary data	Exploratory, inductive, theory-generating. Emphasis on depth rather than generalizability. Qualitative methods , such as ethnographies and case studies	No preference for a particular method - choice depends upon the research question and the nature of the relevant entities and causal mechanisms. Mixed methods encouraged.

Focus	Assumptions relevant to energy social science	Examples of research themes
Theoretical emphasis		
Agency	Individuals have autonomy, behavior is at least partially driven by individual characteristics	Exploring the role of individual beliefs, attitudes and preferences in energy use
Structure	The macro-social, technological, or political environment determines (or prevents) energy systems stability and change	Exploring the positions of firms in an industry, the self-perpetuation of energy-using "practices", or relations between energy systems and the natural environment
Discourse	Energy decisions are mediated through language, symbolism, narratives, rhetorical visions, and discursive coalitions	Exploring the visions around hydrogen fuel cells or small modular reactors, revealing the narratives of fossil fuel incumbents
Hybrid	Energy decisions and policies occur across the categories of agency, structure, and discourse/meaning	Exploring the accelerated diffusion of new automobiles (involving drivers, policies, and marketing messages)
Normative	Energy systems can exert a distinct net positive or negative impact on society	Exploring the distribution of energy related externalities, or the fairness and due process of energy permitting decisions
Behavioural assumptions		
Rational actor (and variations)	Actors are deliberative, knowledgeable, and possess well-defined, stable preferences	Elicitation of preferences and valuation regarding goods and behavior
Attitudes-beliefs	Behavior is shaped by attitudes, beliefs and values	Exploring associations between attitudes or beliefs and behavior
Morals and norms	Behavior is driven by norms about what is right, or what others want	Exploring associations between norms and behavior
Habits	Many behaviors are routinized and engaged in without conscious deliberation	Exploring the role of context and structure in behavior
Lifestyle and identity	Behavior and beliefs are shaped by (and shape) worldview, identity, and social interactions	Exploring identity and behavior; understanding processes of social influences

	Experiments and quasi-experiments	Literature reviews	Surveys and data collection	Data analysis and statistics	Quantitative energy modeling	Qualitative research	Case studies
Core Disciplines	Behavioral science, social psychology, behavioral economics, medical and life sciences	All disciplines, though meta-analysis is more common in quantitative disciplines (e.g. psychology and economics)	Various, but especially economics, sociology and marketing	Various, but especially, economics, psychology and some traditions within political science	Economics, engineering, environmental science (for Integrated Assessment Models)	Anthropology, sociology, history, geography, policy studies, science and technology studies	Various, but similar to qualitative research
Description	Exemplified by randomized controlled trials, but also includes controlled before-and-after studies and various types of matched comparisons. Potentially provides reliable evidence of the causal effect	Reviews generally do not present new or original data. Instead, they scour existing peer-reviewed or grey literature, with the aim of identifying the current state of knowledge. Reviews occasionally use content or discourse analysis.	Survey data can provide valuable information about a given sample and population (e.g. consumers, citizens, or stakeholders), including descriptive statistics and test of association or causality among variables	Technique for exploring quantitative hypotheses, such as comparing means across samples or testing associations of variables; can be performed on either new data collected by the researcher or analysis of existing (secondary) data.	Covers a variety of approaches to analyzing the operation and consequences of different mechanisms using simplified mathematical models.	A variety of techniques for obtaining information regarding the opinions, understandings, attitudes and perceptions of individuals and groups in different contexts.	In-depth, examination of one or more subjects of study (cases) and associated contextual conditions. Relies upon multiple sources of both quantitative and qualitative evidence.

	Experiments and quasi-experiments	Literature reviews	Surveys and data collection	Data analysis and statistics	Quantitative energy modeling	Qualitative research	Case studies
Research culture	Convergent, subject to rigorous scientific evaluation	Convergent for meta-analysis and systematic reviews, but largely divergent for other forms	Somewhat convergent, practices vary by discipline and nature of research question (e.g. descriptive or causal)	Somewhat convergent, general principles hold across disciplines, but some disciplines have developed more specific practices (e.g. econometrics)	Divergent, research questions and model assumptions differ greatly across disciplines and approaches	Divergent, split among different subcategories of qualitative/ intepretivist research, e.g. post-positivism, relativism, and constructivism	Divergent, split between different objectives, types of case (e.g. illustrative, exploratory, cumulative, critical) and types of evidence
Codes of practice for methodological rigor	Can be based upon a hierarchy of evidence, studies assessed against predetermined criteria, standardized reporting structures	Some standardized assessment criteria exist, particularly for systematic reviews and meta-analysis	Can be based upon increasingly accepted assessment structures	Based upon statistical principles, but preferred techniques and practices vary between disciplines	Some codes have been proposed, but these vary with the model type	Data collection not always guided by explicit criteria	Depends on case study types, whether single or comparative cases are needed, and spatial or temporal variation

What is novelty?!

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- ***Theoretical novelty***
  - *Invention or creation (TIS, social practice)*
  - *Synthesis or reformation (UTAUT)*
  - *Testing or triangulation (fun!)*

JOURNAL ARTICLE

Conceptual Models and the Cuban Missile Crisis

Graham T. Allison

The American Political Science Review

Vol. 63, No. 3 (Sep., 1969), pp. 689-718

Published by: American Political Science Association

DOI: 10.2307/1954423

https://www.jstor.org/stable/1954423

Page Count: 30

What is novelty?!

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- ***Methodological novelty***
  - *Mixed or multi-methods*
  - *Behavioural realism (for models)*
  - *Repeated data collection or longitudinal research*

ELSEVIER

Energy Research & Social Science
Volume 22, December 2016, Pages 125-136

Original research article

Laundry, energy and time: Insights from 20 years of time-use diary data in the United Kingdom

Ben Anderson ✉

What is novelty?!

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- ***Empirical novelty***
  - *New applications (regions, cases, contexts, theories)*
  - *New data from hard to reach groups (children, indigenous people, survivors > see next slide)*
  - *New evidence (big data, telematics, remote sensing)*

ELSEVIER

Energy Research & Social Science

Volume 44, October 2018, Pages 411-418

Original research article

Terrorism, geopolitics, and oil security: Using remote sensing to estimate oil production of the Islamic State

Quy-Toan Do [a], Jacob N. Shapiro [b], Christopher D. Elvidge [c], Mohamed Abdel-Jelil [d], Daniel P. Ahn [e], Kimberly Baugh [f], Jamie Hansen-Lewis [g], Mikhail Zhizhin [f], Morgan D. Bazilian [h]

What is rigor: Hierarchies of validity and evidence for experiments?

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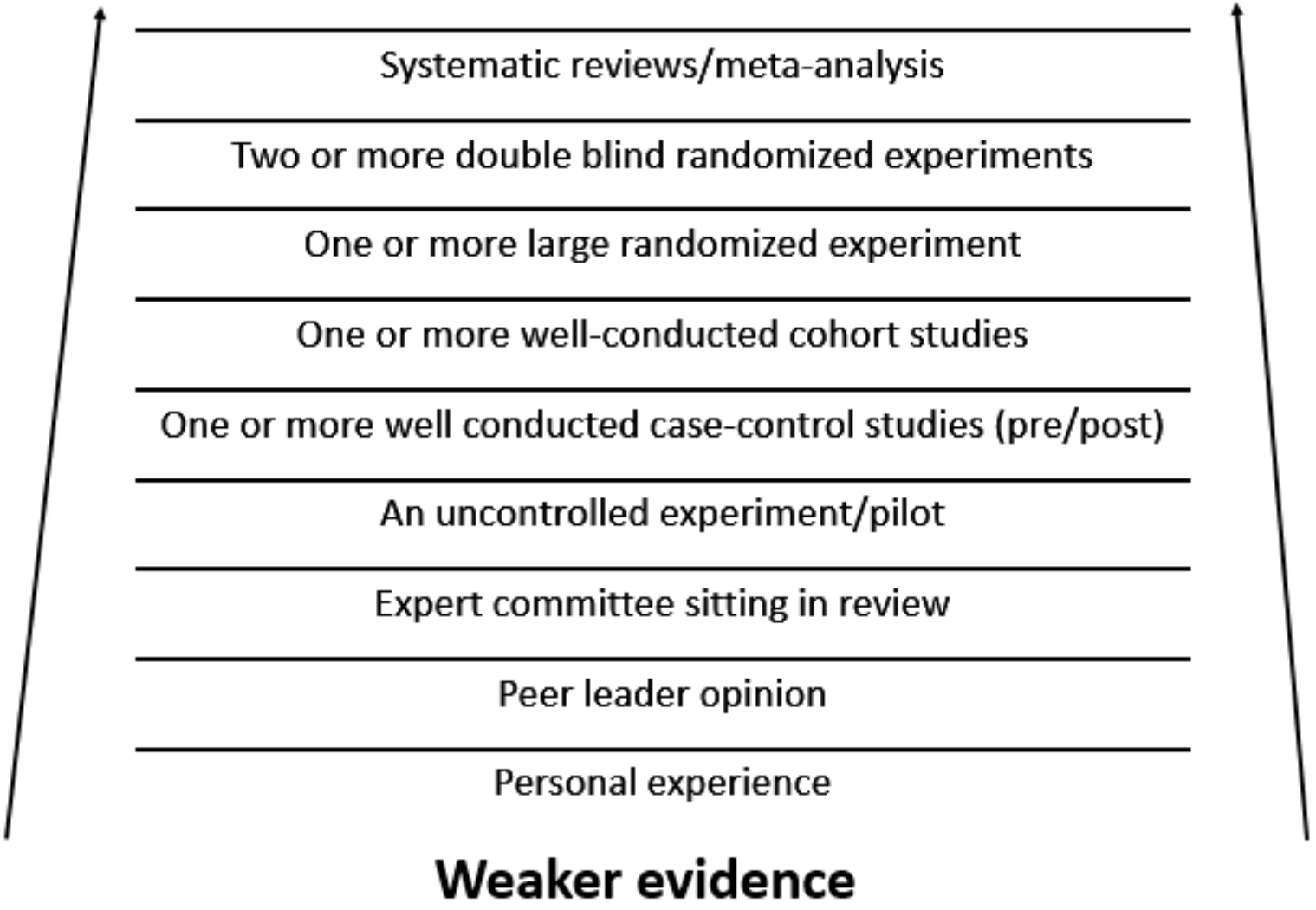

What is rigor: Hierarchies of validity and evidence for reviews?

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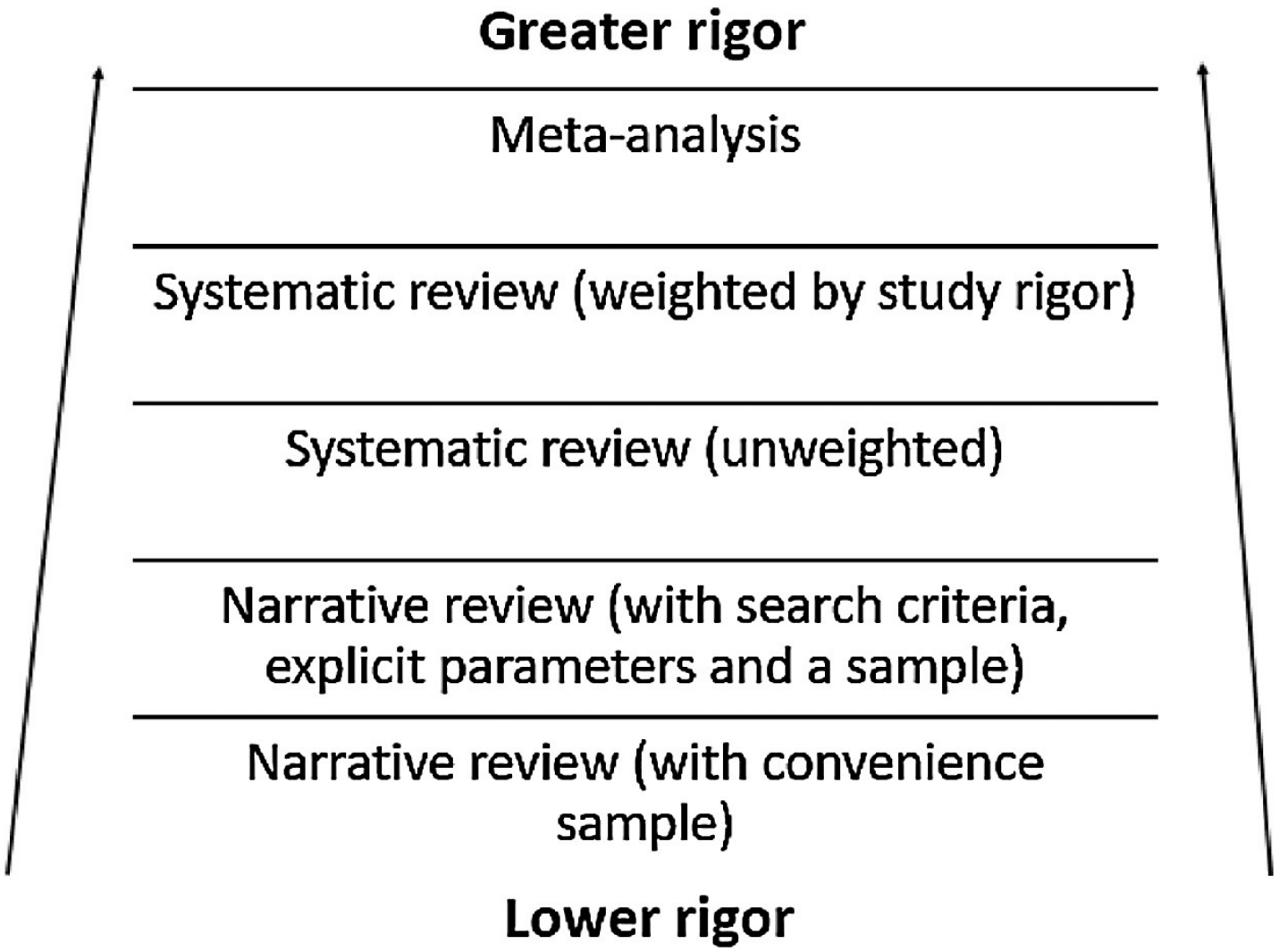

What is rigor: Hierarchies of validity and evidence for data analysis?

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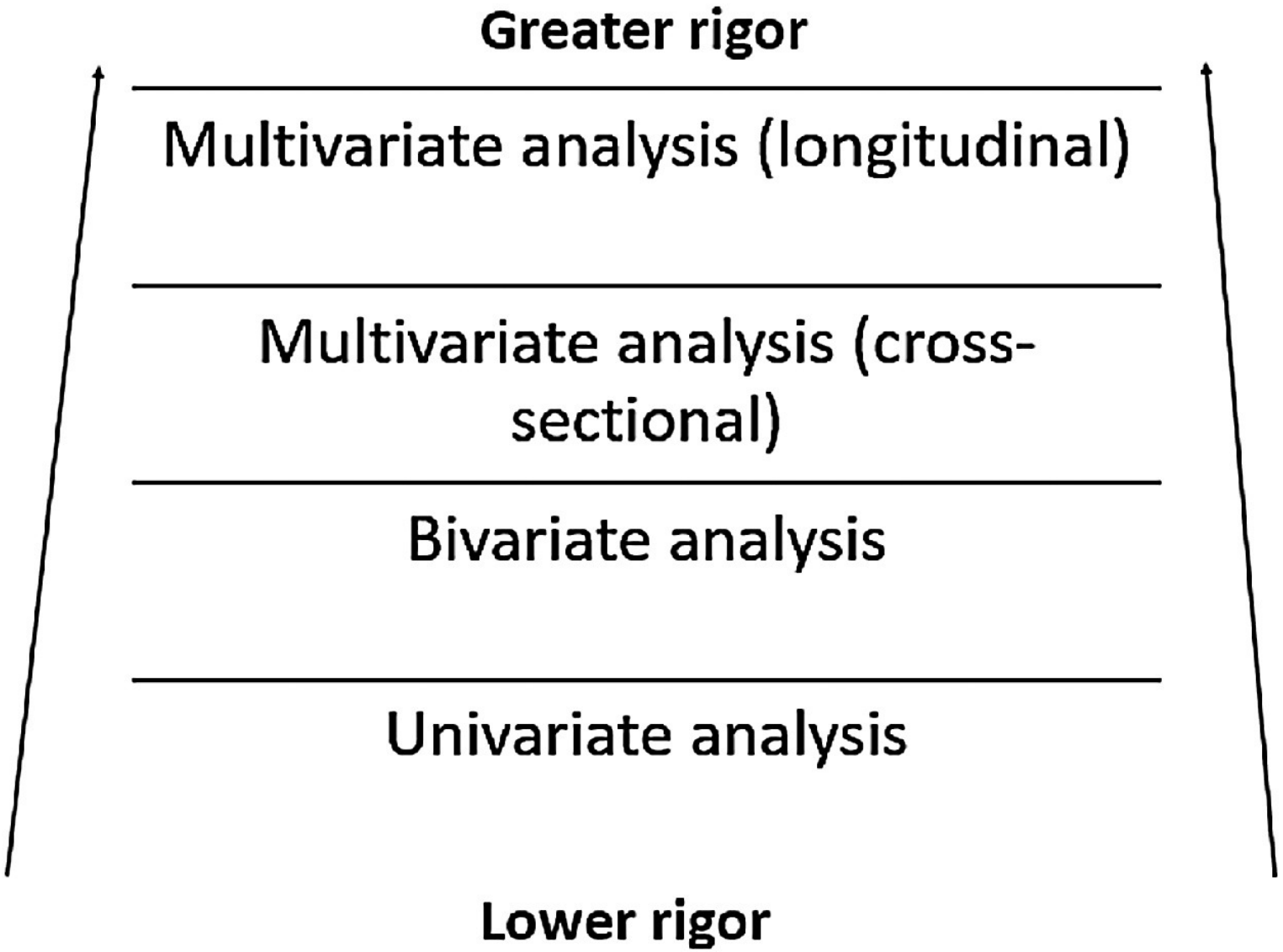

Hierarchies of validity and evidence for case studies?

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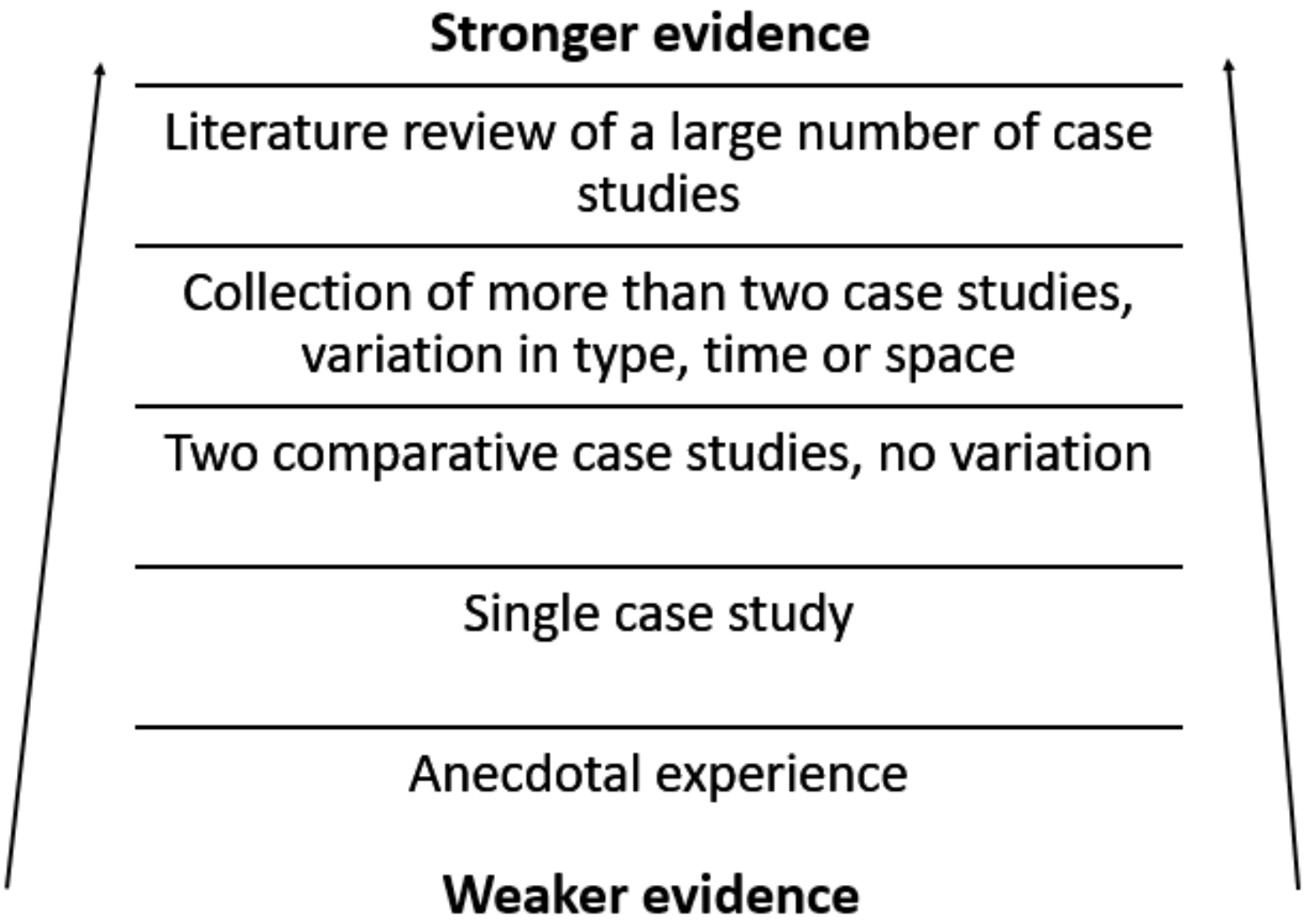

Problematizing hierarchies of validity and evidence

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- *You need the lower levels or rungs to lead to the higher ones, someone has to do them*
- *Often requires a balancing between them, no article excels in all, especially those with mixed designs*
- *Differs greatly between disciplines, imagine submitting a quantitative meta-analysis to a discourse journal*
- *A "horses for courses" mentality as well, don't choose higher forms if*
  - *Cannot execute (lack of time, funding, access)*
  - *Marginal value sometimes to moving up (confidence interval stays roughly the same)*

The required sample size for obtaining an estimate of specified precision from different population sizes

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Population size	Sample sizes for the 95% confidence intervals					
	+/- 10%		+/- 5%		+/- 3%	
	50/50 split	80/20 split	50/50 split	80/20 split	50/50 split	80/20 split
100	49	38	80	71	92	87
200	65	47	132	111	169	155
400	78	53	196	153	291	253
600	83	56	234	175	384	320
800	86	57	260	188	458	369
1,000	88	58	278	198	517	406
2,000	92	60	322	219	696	509
4,000	94	61	351	232	843	584
6,000	95	61	361	236	906	613
8,000	95	61	367	239	942	629
10,000	95	61	370	240	965	640
20,000	96	61	377	243	1,013	661
40,000	96	61	381	244	1,040	672
100,000	96	61	383	245	1,056	679
1,000,000	96	61	384	246	1,066	683
1,000,000,000	96	61	384	246	1,067	683

What is style?!

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- ***Robust macro-structure***
  - *Titles*
  - *Abstract*
  - *Sub-headings*
  - *Placement of paragraphs*
  - *Regular signposting*
  - *Often achieved with a high level outline from the start*

What is style?!

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- ***Clarity of expression in microstructure***
  - *Paragraph unity*
  - *Paragraph parsimony*
  - *Subject/object congruence and active/passive voice*
  - *Comprehensive but accurate referencing*
  - *Appropriate length (aim for short)*
  - *Minimal jargon and acronyms*
  - *Use visual elements such as diagrams, photographs, figures and charts*

What is style?!

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- ***Transparency and humility***
  - *Err on the side of transparency*
  - *Proactively list your limitations*
  - *Be respectful to those you critique and especially to your peer reviewers*
  - *Solicit criticism from colleagues*
  - *Write and rewrite, a "willingness to be terrible!"*

What is style?!

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	Good papers	Bad papers
Title	Describes topic but also key findings, themes, and contributions, and/or cases	Describes only the topic or method
	Identifies the geographic location of the research (if relevant)	Does not mention location or case study (if relevant)
Abstract	Clearly states research objectives or questions, methods, findings, limitations, and future directions	Focuses only on one or two aspects of the manuscript
	Is closely copy edited, is not repeated later in the text	Is full of typos, or repeated in the text itself verbatim
Introduction	Is short and sharp, often with an attention getting device at the start	Has a messy introduction that is too long
	Presents the core argument or question within the first few paragraphs	Presents the core argument too late
	Is well linked with the rest of the paper	Is poorly-linked with the rest of the paper
	Is well linked with the conclusion and findings	Ignores the link between the introduction and conclusion
	Previews the structure of the paper to come	Does not give the structure of the argument

What is style?!

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	Good papers	Bad papers
Research Questions, Frameworks, Methods and Designs	Has a clear, answerable, interesting research question or questions	Has an unclear research question or none at all
	If appropriate, engages with a conceptual framework or frameworks	Does not state an appropriate theoretical or conceptual framework
	Is explicit about research design	Does not clarify research design
	Follows or acknowledges codes of practice for its research design	Does not consider codes of practice
	Mentions and pre-empts methodological limitations	Ignores or hides methodological limitations
Results	Actively interprets data	Lets data speak for itself
	Is selective and judicious about data utilized	Presents data not directly linked to the core argument
	Tightly couples data and analysis	Decouples the presentation of data from the analysis

What is style?!

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	Good papers	Bad papers
Discussion/ Conclusion	Aims to make the conclusion the best part of the article	Has a thin conclusion
	Does not start a new argument in the conclusion	Starts a new argument in the conclusion
	Does not present new data in the conclusion	Presents new data in the conclusion
	Uses the conclusion to discuss findings as well as future research directions	Lets the conclusion be a summary and nothing else
	Cautiously discusses limitations and generalizability of findings (or lack thereof)	Ignores limitations and/or inappropriately presents findings as fully universal or generalizable
General structure	Tells a compelling story for the reader	Lets the reader wonder what the results mean
	Has coherent, logical structure with clear headings and subheadings	Has jumbled structure and no headings or subheadings
	Strong paragraph unity	Lacks paragraph unity
	Is well signposted	Forgets signposts

What makes an excellent output?

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The idea is that you can design for impact and excellence:

- Interdisciplinary or transdisciplinary
- Mixed methods or triangulation
- Replicability, falsifiability or confirmability
- Comparative cases or generalizability
- Address a practical real-world problem (poverty, species extinction)
- Advance or apply concepts and theories
- All of the above?!

A brief aside on the value or even necessity of interdisciplinary thinking

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Decarbonisation as an interdisciplinary challenge (policy mixes)

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comment

Towards demand-side solutions for mitigating climate change

Research on climate change mitigation tends to focus on supply-side technology solutions. A better understanding of demand-side solutions is missing. We propose a transdisciplinary approach to identify demand-side climate solutions, investigate their mitigation potential, detail policy measures and assess their implications for well-being.

Felix Creutzig, Joyashree Roy, William F. Lamb, Inês M. L. Azevedo, Wändi Bruine de Bruin, Holger Dalkmann, Oreane Y. Edelenbosch, Frank W. Geels, Arnulf Grubler, Cameron Hepburn, Edgar G. Hertwich, Radhika Khosla, Linus Mattauch, Jan C. Minx, Anjali Ramakrishnan, Narasimha D. Rao, Julia K. Steinberger, Massimo Tavoni, Diana Ürge-Vorsatz and Elke U. Weber

Table 1 | Illustrative 'avoid–shift–improve' options in different sectors and services

	Service	Avoid	Shift	Improve
Transport	AccessibilityMobility	Integrate transport and land-use planningSmart logisticsTeleworkingCompact cities	Mode shift from car to cycling, walking, or public transit	Electric two-, three- and four-wheelersEco-drivingElectric vehiclesSmaller, light weight vehicles
Buildings	Shelter	Passive house or retrofit (avoiding demand for heating/cooling)Change temperature set-points	Heat pumps, district heating and coolingCombined heat and powerInvertor air conditioning	Condensing boilersIncremental insulation optionsEnergy-efficient appliances
Manufactured products and services	ClothingAppliances	Long-lasting fabric, appliances, sharing economyEco-industrial parks, circular economy	Shift to recycled materials, low-carbon materials for buildings and infrastructure	Use of low-carbon fabricsNew manufacturing processes and equipment use
Food	Nutrition	Calories in line with daily needsFood waste reduction	Shift from ruminant meat to other protein sources where appropriate	Reuse food wasteSmaller, efficient fridgesHealthy fresh food to replace processed food

Many options, such as urban form and infrastructures, are systemic and influence several sectors simultaneously.

Decarbonisation as an interdisciplinary challenge (gender and cooking)

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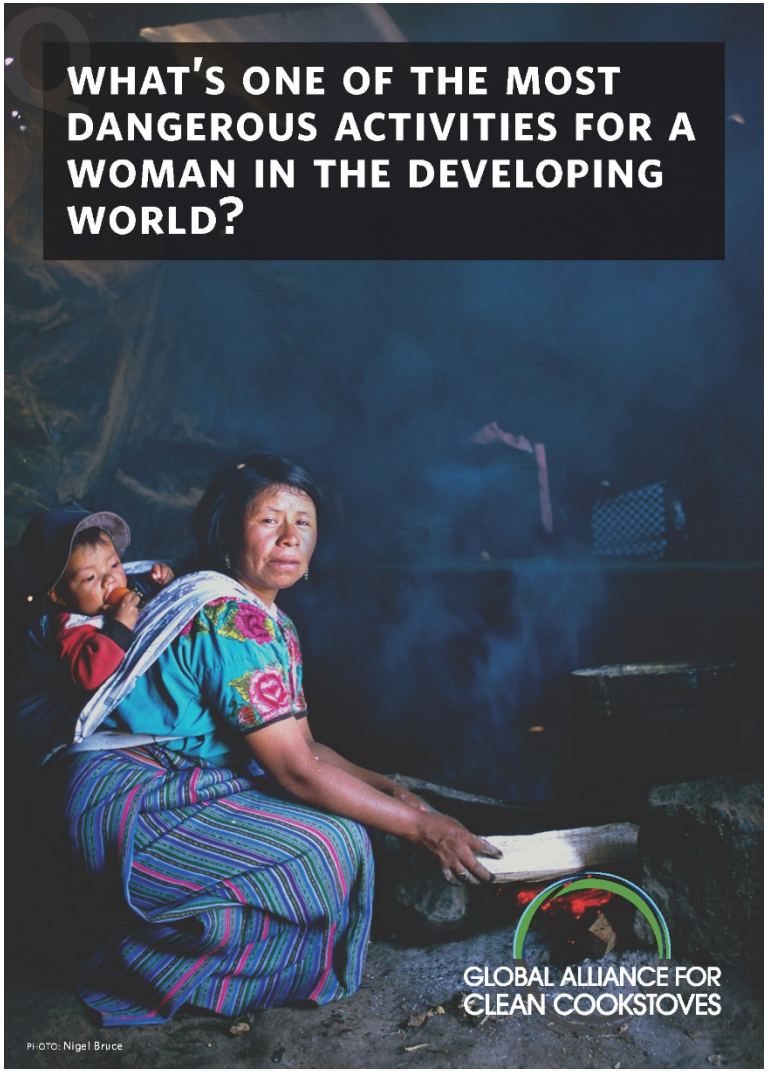

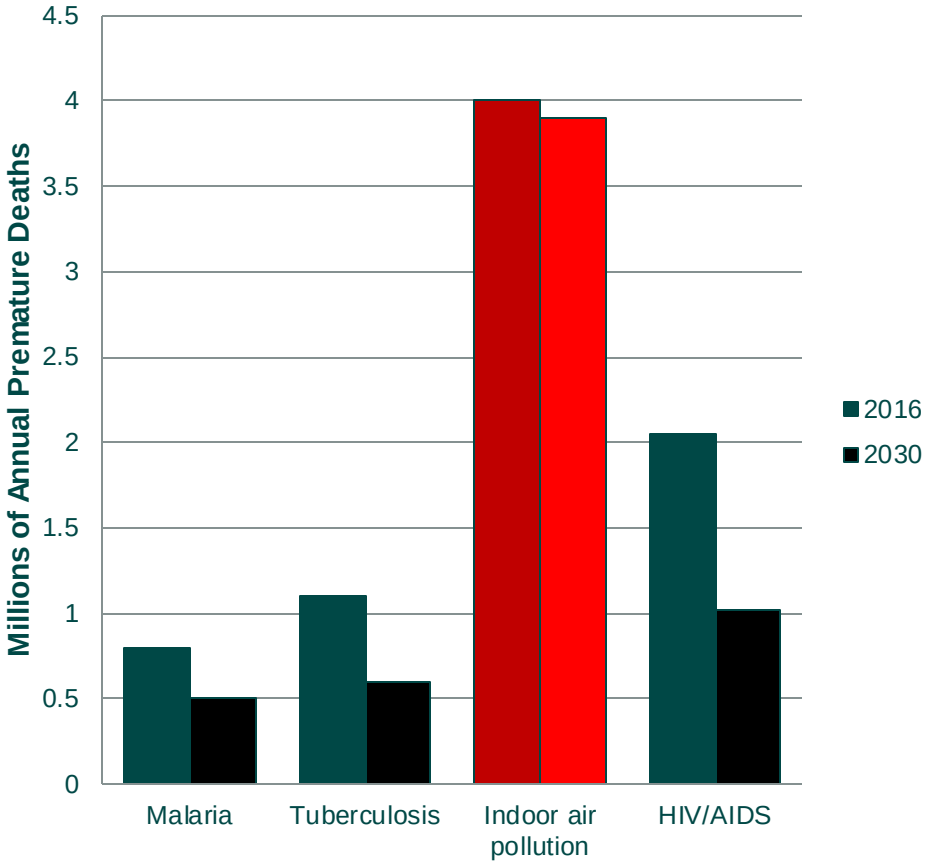

Decarbonisation as an interdisciplinary challenge (gender and cooking)

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Changing the source of pollution	Improving the living environment	Modifying user behavior
Improved cooking devices • Improves stoves without flues • Improves stoves with flues Alternative fuel-cooker combinations • Briquettes and pellets • Kerosene • Liquefied petroleum gas • Biogas • Natural gas, producer gas • Solar cookers • Modern biofuels (e.g. ethanol, plant oils) • Electricity Reduced need for fire • Retained heat cooker (haybox) • Efficient housing design and construction • Solar water heating • Pressure cooker	Improved ventilation • Smoke hoods • Eaves spaces • Windows Kitchen design and placement of stove • Kitchen separate from house reduces exposure of family (less so for cook) • Stove at waist height reduces direct exposure of the cook leaning over fire	Reduced exposure by changing cooking practices • Fuel drying • Pot lids to conserve heat • Food preparation to reduce cooking time (e.g. soaking beans) • Good maintenance of stoves, chimneys and other appliances Reduced exposure by avoiding smoke • Keeping children away from smoke (e.g. in another room if available and safe to do so)

Decarbonisation as an interdisciplinary challenge (multi-dimensionality)

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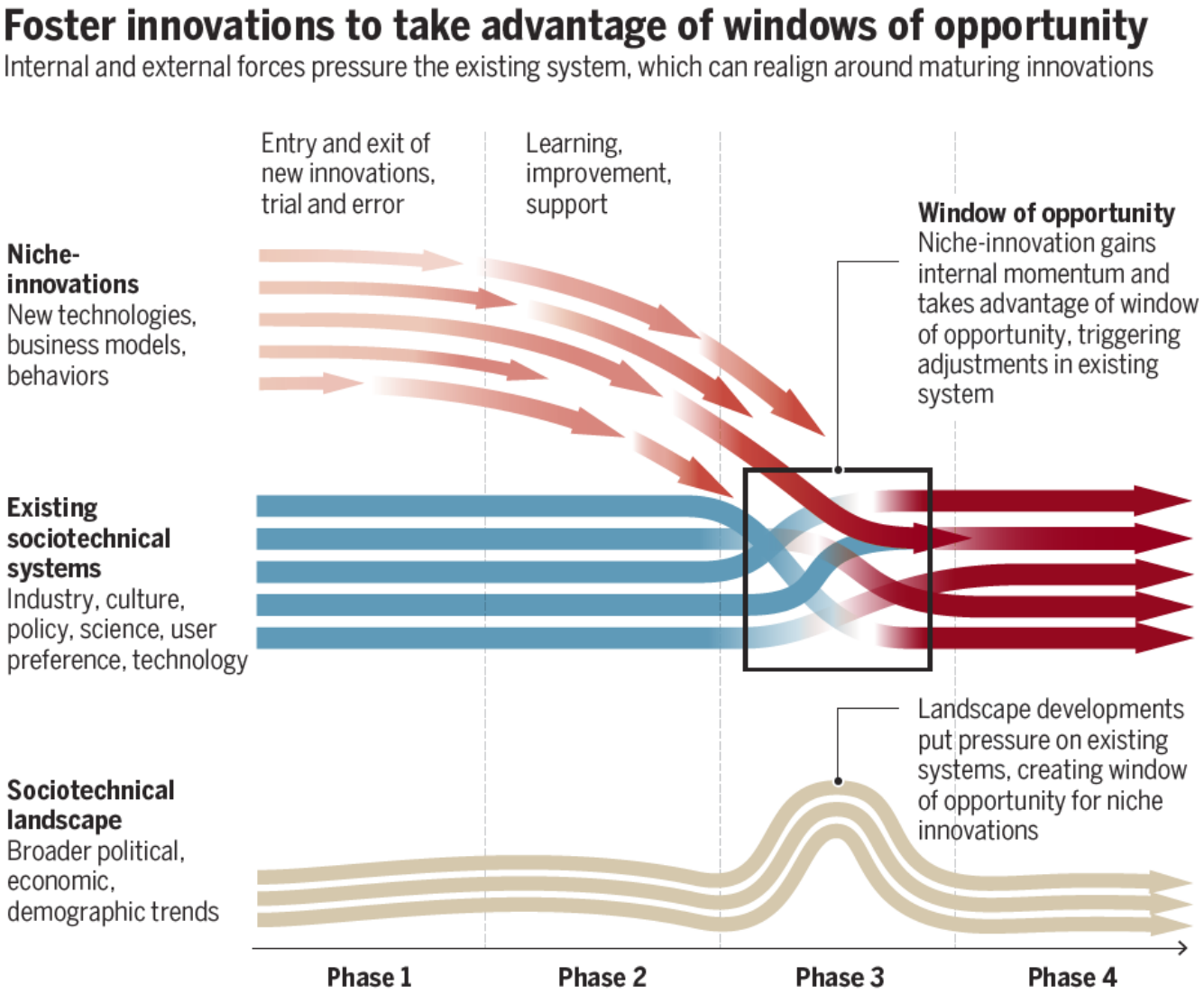
- Transitions are a multi-scalar, polycentric process
- They are co-evolutionary and also temporally dynamic



Source: Geels, FW, BK Sovacool, T Schwanen, and S Sorrell. "Sociotechnical transitions for deep decarbonisation," *Science* 357 (6357) (September 22, 2017), pp. 1242-1244.

Decarbonisation as an interdisciplinary challenge (energy justice)

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Micro injustices

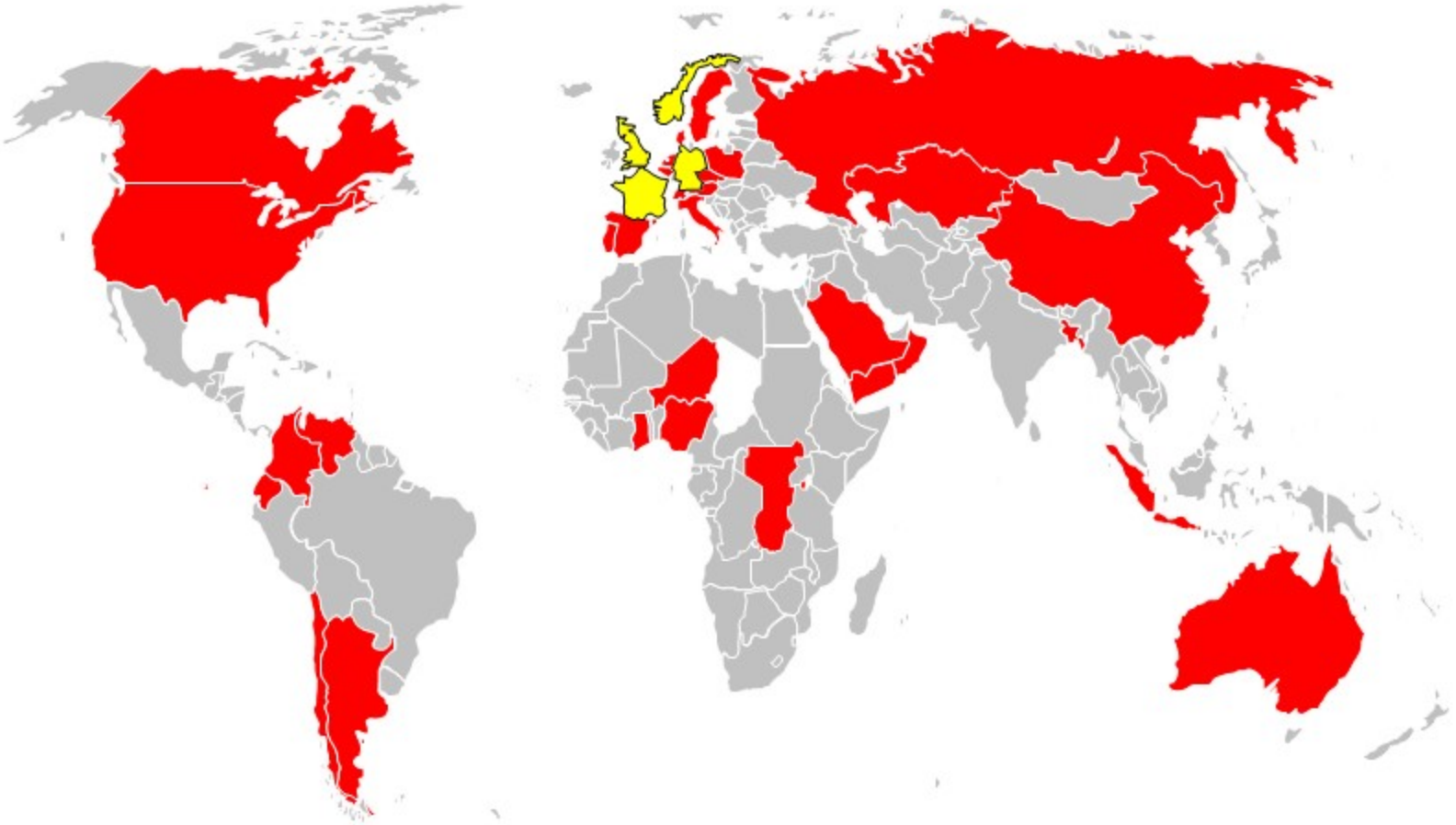
Local pollution and waste
Community health
Property prices
Unequal household benefits
Traffic congestion
Parking
Closure of local coal mines

Meso injustices

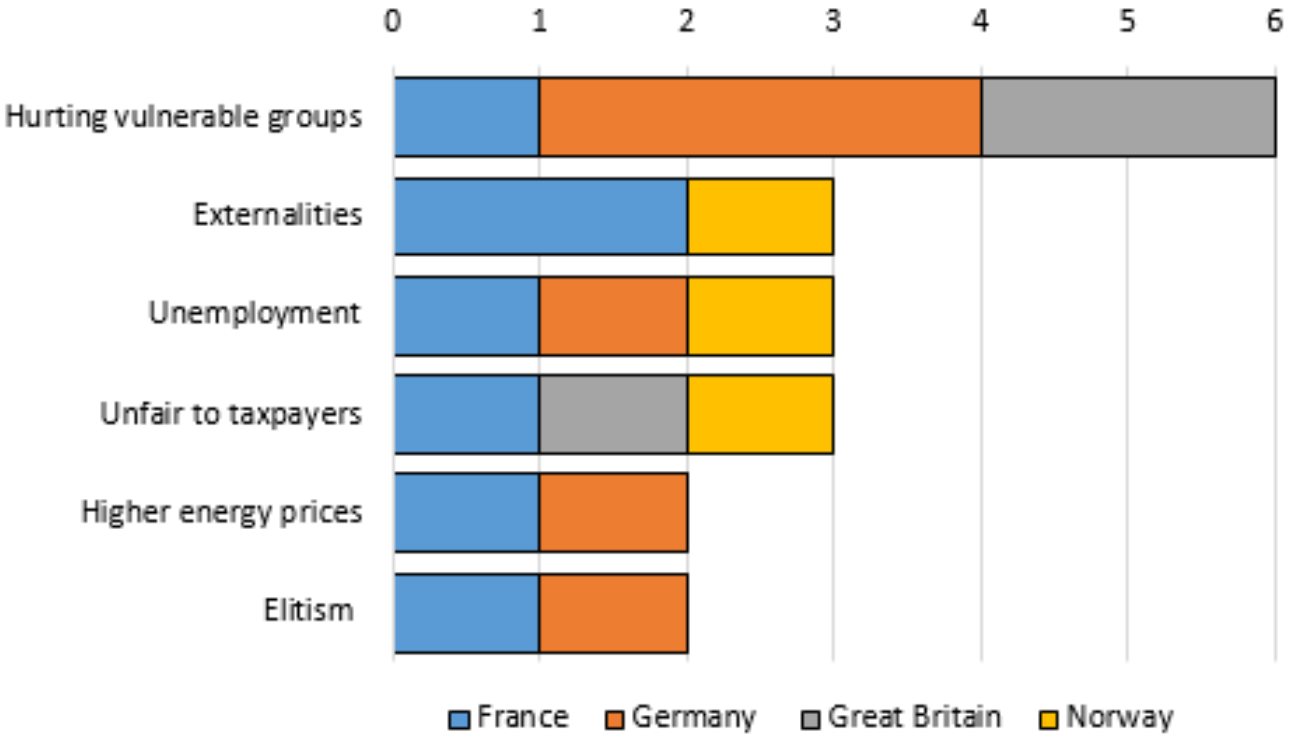
Nuclear accidents
Disruption of other national transitions
Higher national energy prices
Loss of national employment
Expansion of roads
Undermining utility business models
Bankruptcy of national firms

Macro injustices

Uranium mining and waste
Unsafe nuclear exports
Metal and mineral inputs
Flows of electronic waste
Exporting of dirty cars
Poor overseas labour conditions
Disruption of fossil fuel industry
Disruption of other transitions



Decarbonisation as an interdisciplinary challenge (energy justice)



Sovacool, BK, A Hook, M Martiskainen, and LH Baker, "Decarbonisation and its discontents: A critical energy justice perspective on four low-carbon transitions," *Climatic Change* 155(4) (August, 2019), pp. 581–619.

Sovacool, BK, A Hook, M Martiskainen, and LH Baker. "The whole systems energy injustice of four European low-carbon transitions," *Global Environmental Change* 58 (September, 2019), 101958, pp. 1-15.

What makes an excellent output?

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Robust methods (and time intensity) sometimes a rough proxy:

- Primary data (interviews, focus groups, surveys), especially hard to access places
- Modelling (access to supercomputers)
- New/innovative methods (shadowing, stalking, diaries)
- Meta-analysis (meta-surveys, systematic reviews)
- Content analysis

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journal homepage: www.elsevier.com/locate/erss

Perspectives

The hidden economic benefits of large-scale renewable energy deployment: Integrating heat, electricity and vehicle systems

Lance Noel

Center for Energy Technologies, Department of Business Development and Technology, Aarhus University, Denmark

ARTICLE INFO

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ABSTRACT

The transition to large-scale renewable energy in order to mitigate climate change is necessity. Much academic literature has begun to focus on the technical and economic plausibility of such a transition to renewable energy, but these studies often explore one to several potential energy systems and their costs and benefits as compared to the existing system. This paper summarizes the policy implications of a recent analysis that builds on the literature of the integration of renewable electricity, electric vehicles and electric heat by modeling and testing nearly 86 million different combinations of wind, solar, natural gas, vehicle-to-grid capable electric vehicles, and electric heat. After each system was modeled for four years of operation to ensure reliability, the costs of energy systems were then calculated both with and without externalities to better understand how this cost affects implementation. We present the results and policy implications of our analysis across the 86 million energy systems and conclude with the role of social science in future research.

UK's Research Excellence Framework

REF2014
Research Excellence Framework

Four star	Quality that is world-leading in terms of originality, significance and rigour.
Three star	Quality that is internationally excellent in terms of originality, significance and rigour but which falls short of the highest standards of excellence.
Two star	Quality that is recognised internationally in terms of originality, significance and rigour.
One star	Quality that is recognised nationally in terms of originality, significance and rigour.
Unclassified	Quality that falls below the standard of nationally recognised work. Or work which does not meet the published definition of research for the purposes of this assessment.

- *Self admission, I probably produce a 4 star myself only once every few years*
- *Especially hard to distinguish 3 star from 4 star: Like erotic films and pornography, you "know it when you see it"*

What is “Impact” beyond the REF then? Not only citations:

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- Citation counts (ISI, Scopus, or Google Scholar)
- Author impact factor/h-index
- Downloads (journal, institutional website, or SSRN)
- Court decisions / testimony
- Political debates documenting use
- Press releases or citations in the popular press
- Personal communications/emails/requests
- Requests for consultancies
- Media interview requests
- Invitations to conferences
- In rare cases, advertising?

“Impact” can take a variety of forms

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Source: McCubbin, D and BK Sovacool. “Quantifying the Health and Environmental Benefits of Wind Power to Natural Gas,” *Energy Policy* 53 (February, 2013), pp. 429-441.

“Impact” can take a variety of forms

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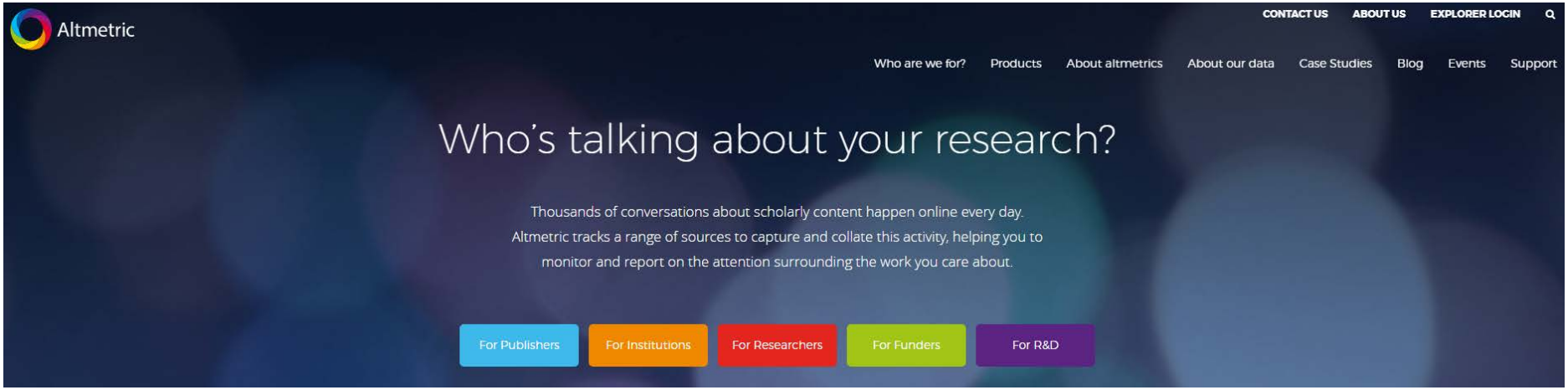

PlumX Metrics – Top Social Media Articles

Below is a list of articles that have had the most social media attention. The Plum Print next to each article shows the relative activity in each of the five categories of metrics: Usage, Captures, Mentions, Social Media and Citations. Go here to learn more about PlumX Metrics.

The political economy of technical fixes: The (mis)alignment of clean fossil and political regimes

Is OPEC dead? Oil exporters, the Paris agreement and the transition to a post-carbon world

The Muillean Gaoithe and the Melin Wynt: Cultural sustainability and community owned wind energy schemes in Gaelic and Welsh speaking communities in the United Kingdom

View All

Some oddities and paradoxes, my own citation profile:

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- *A report leads (and same with some colleagues e.g. Jim Watson and Steve Sorrell)*
- *Elsevier/ScienceDirect dominates* (Energy Policy)
- *Great variance between Google and others such as Scopus (7000 vs 15000*)
- *Not necessarily my best work is cited the most*
- *Books hardly there*
- *Little difference in open access or not*
- *I do monitor and update (Smith, Brown)*
- *At some point, passed a threshold to self-sustaining, difficult to predict*

What do I expect to see when I evaluate colleagues?

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- *An excellent article every 2-3 years*
- *Consistency in publishing 2 or 3 star articles, 2-3 a year*
- *500 to 1000 citations in total*
- *H factor of at least 10, or the "time-tenure rule" of H factor / date of PhD (must be 1 or above)*
- *At least one article cited 100 times*
- *It really can be hyper-competitive*
  - *Postdoc from Stanford with 4 books, 60+ articles, 8 grants*

Tips for self-promotion

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- *It won't happen by itself, sometimes more work than actually writing, submitting, revising, and publishing*
  - *Ask colleagues to (reasonably) cite your work*
  - *Cite the work of your colleagues ("citation clubs")*
  - *Cite your own research, though not obsessively*
  - *Keep on top of the literature and email others your research, perhaps even personalized emails to those you cite or "reference list spamming"*

Tips for self-promotion

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- *Distribute your material at conferences (my WREC example)*
- *Create e-mail lists of colleagues in particular areas (topical and geographic)*
- *Send to email-lists (more below) but don't abuse and always frame*
- *Have a professional and a personal website (next few slides)*

Websites

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Accelerating innovation | Energy Justice | Energy productivity | Housing and buildings | Industry | Urban Transport

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Prof Benjamin Sovacool

Director

Professor of Energy Policy (SPRU - Science Policy Research Unit), University of Sussex

Professor Benjamin K. Sovacool, is Director of the Centre on Innovation and Energy Demand and of the Sussex Energy Group. Benjamin is also Professor of Energy Policy at the Science Policy Research Unit (SPRU). Professor Sovacool works as a researcher and consultant on issues pertaining to energy policy, energy security, climate change mitigation, and climate change adaptation. More specifically, his research focuses on renewable energy and energy efficiency, the politics of large-scale energy infrastructure, designing public policy to improve energy security and access to electricity, and building adaptive capacity to the consequences of climate change.

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Websites

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scottvalentine.net

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RECENT COMMENTS

Home

Scott Valentine is Assistant Dean (Research) and Associate Professor of Environmental and Energy Policy at the Lee Kuan Yew School of Public Policy, National University of Singapore.

Welcome

Dear friends,

I decided to design a personal web-site in order to provide a central forum for communicating with students and clients (both current and former).

Websites

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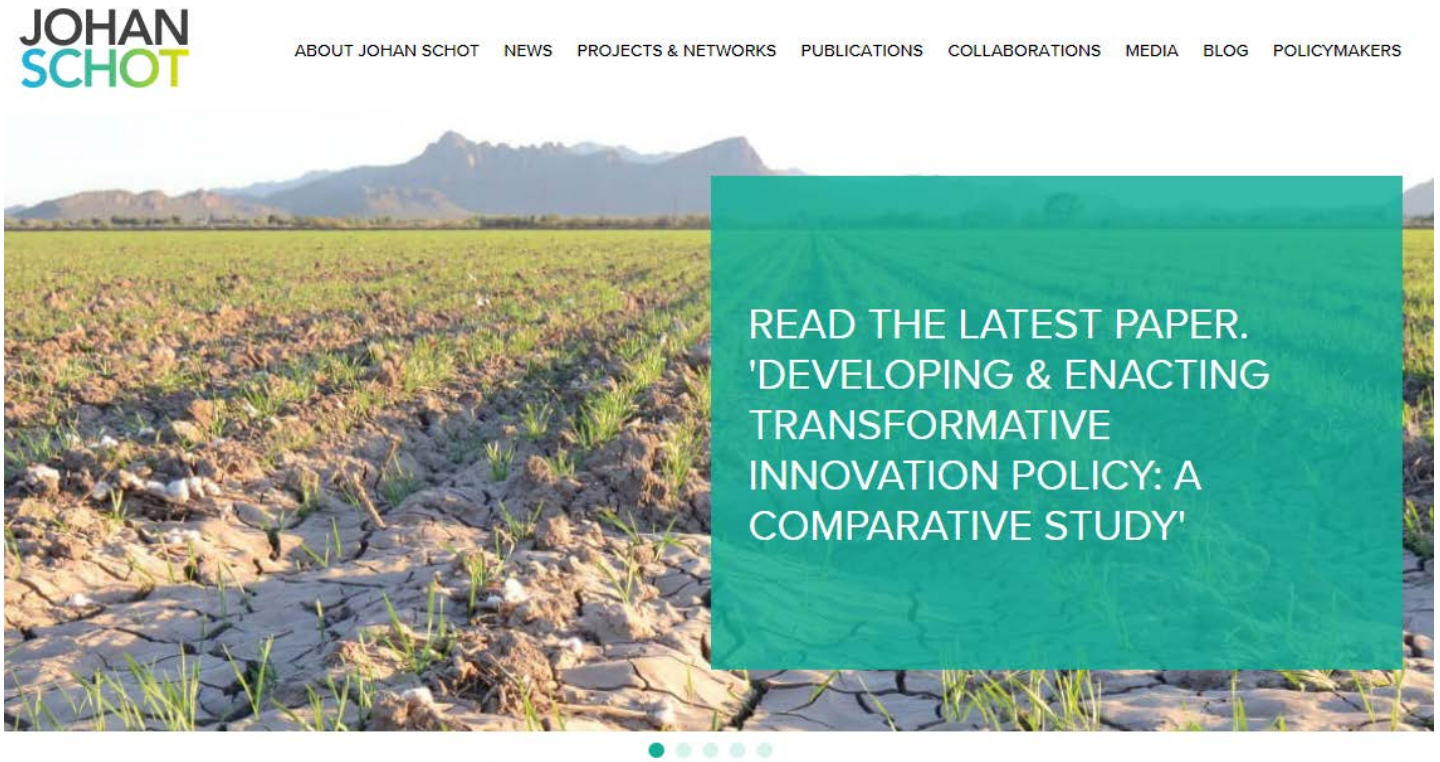

Choose journals that promote you

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- Consider journals that give prizes or free open access
- Consider publishers that make your work more widely distributed

Top 25 Hottest Articles

Energy Energy Policy
January - March 2009

1. **Resources and future supply of oil** • Article
   Energy Policy, Volume 37, Issue 2, 1 February 2009, Pages 441-464
   Kjarstad, J.; Johnsson, F.
2. **The technical, geographical, and economic feasibility for solar energy to supply the energy needs of the US** • Article
   Energy Policy, Volume 37, Issue 2, 1 February 2009, Pages 387-399
   Fthenakis, V.; Mason, J.E.; Zweibel, K.
   Cited by Scopus (1)
3. **Are biofuels a feasible option?** • Article
   Energy Policy, Volume 37, Issue 1, 1 January 2009, Pages 10-14
   Goldemberg, J.; Guardabassi, P.
4. **Photovoltaic technologies** • Article
   Energy Policy, Volume 36, Issue 12, 1 December 2008, Pages 4390-4396
   Bagnall, D.M.; Boreland, M.
5. **Biofuels and the biorefinery concept** • Article
   Energy Policy, Volume 36, Issue 12, 1 December 2008, Pages 4406-4409
   Taylor, G.
6. **Beyond batteries: An examination of the benefits and barriers to plug-in hybrid electric vehicles (PHEVs) and a vehicle-to-grid (V2G) transition** • Article
   Energy Policy, Volume 37, Issue 3, 1 March 2009, Pages 1095-1103
   Sovacool, B.K.; Hirsh, R.F.

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Articles

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Extract from **ScienceDirect TOP25 Hottest Articles** April - June 2009
Mon Oct 12 06:18:09 BST 2009

1. **How Green Is the Smart Grid?**
   The Electricity Journal, Volume 22, Issue 3, April 2009, Pages 29-41
2. **Going Completely Renewable: Is It Possible (Let Alone Desirable)?**
   The Electricity Journal, Volume 22, Issue 4, May 2009, Pages 95-111
3. **Electricity Restructuring: A Review of Efforts around the World and the Consumer Response**
   The Electricity Journal, Volume 22, Issue 3, April 2009, Pages 70-86
4. **'NowGen'': Getting Real about Coal Carbon Capture and Sequestration**
   The Electricity Journal, Volume 22, Issue 4, May 2009, Pages 25-42
5. **Wind Power Interconnection into the Power System: A Review of Grid Code Requirements**
   The Electricity Journal, Volume 22, Issue 5, June 2009, Pages 54-63
6. **The Power of Dynamic Pricing**
   The Electricity Journal, Volume 22, Issue 3, April 2009, Pages 42-56
7. **Carbon Constrained: The Future of Electricity Generation**
   The Electricity Journal, Volume 22, Issue 5, June 2009, Pages 64-74
8. **Demand Response and Electricity Market Efficiency**
   The Electricity Journal, Volume 20, Issue 3, April 2007, Pages 69-85
9. **The Experience with Renewable Portfolio Standards in the United States**
   The Electricity Journal, Volume 20, Issue 4, May 2007, Pages 8-20
10. **Valuation of Carbon Capture and Sequestration under Greenhouse Gas Regulations**
    The Electricity Journal, Volume 22, Issue 4, May 2009, Pages 11-24

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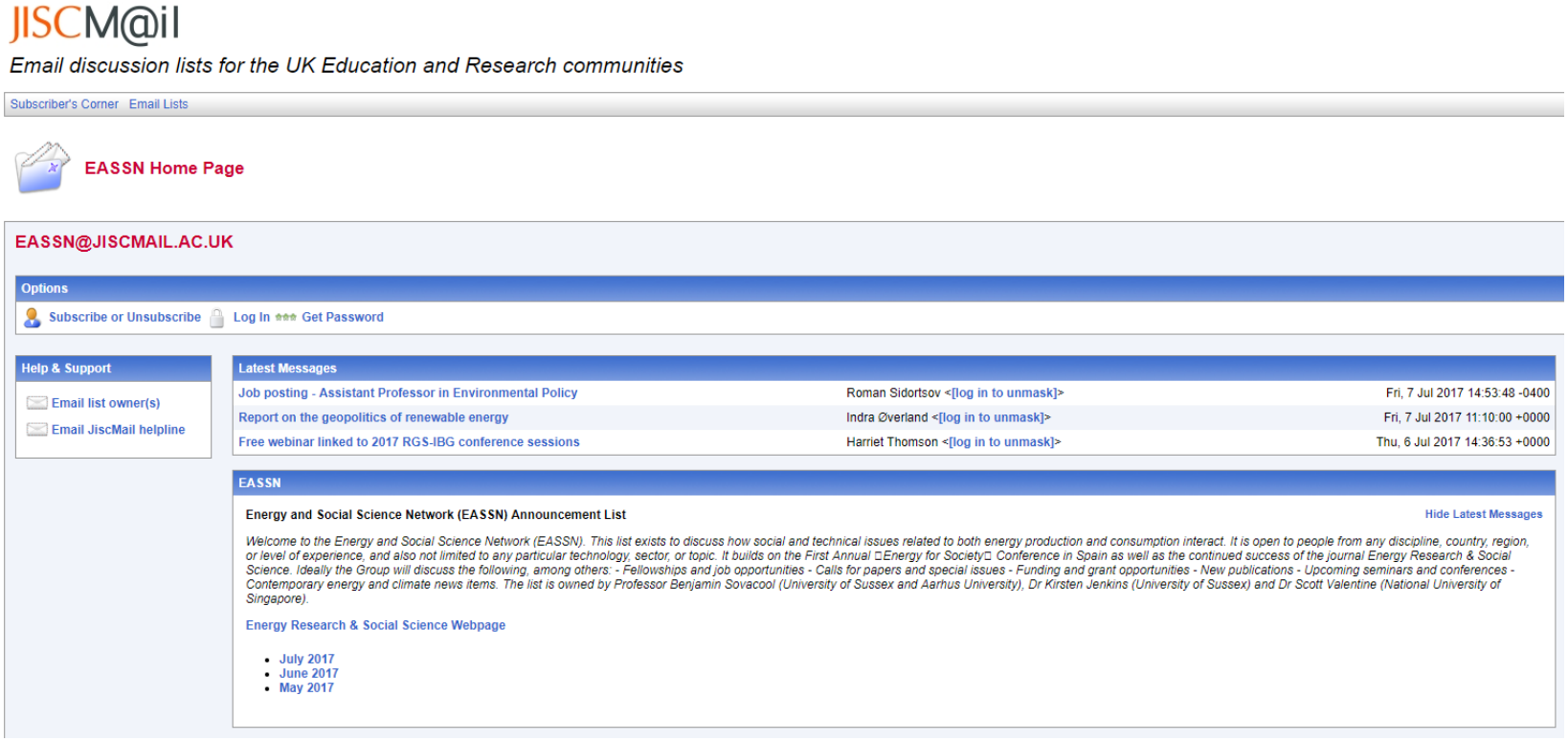

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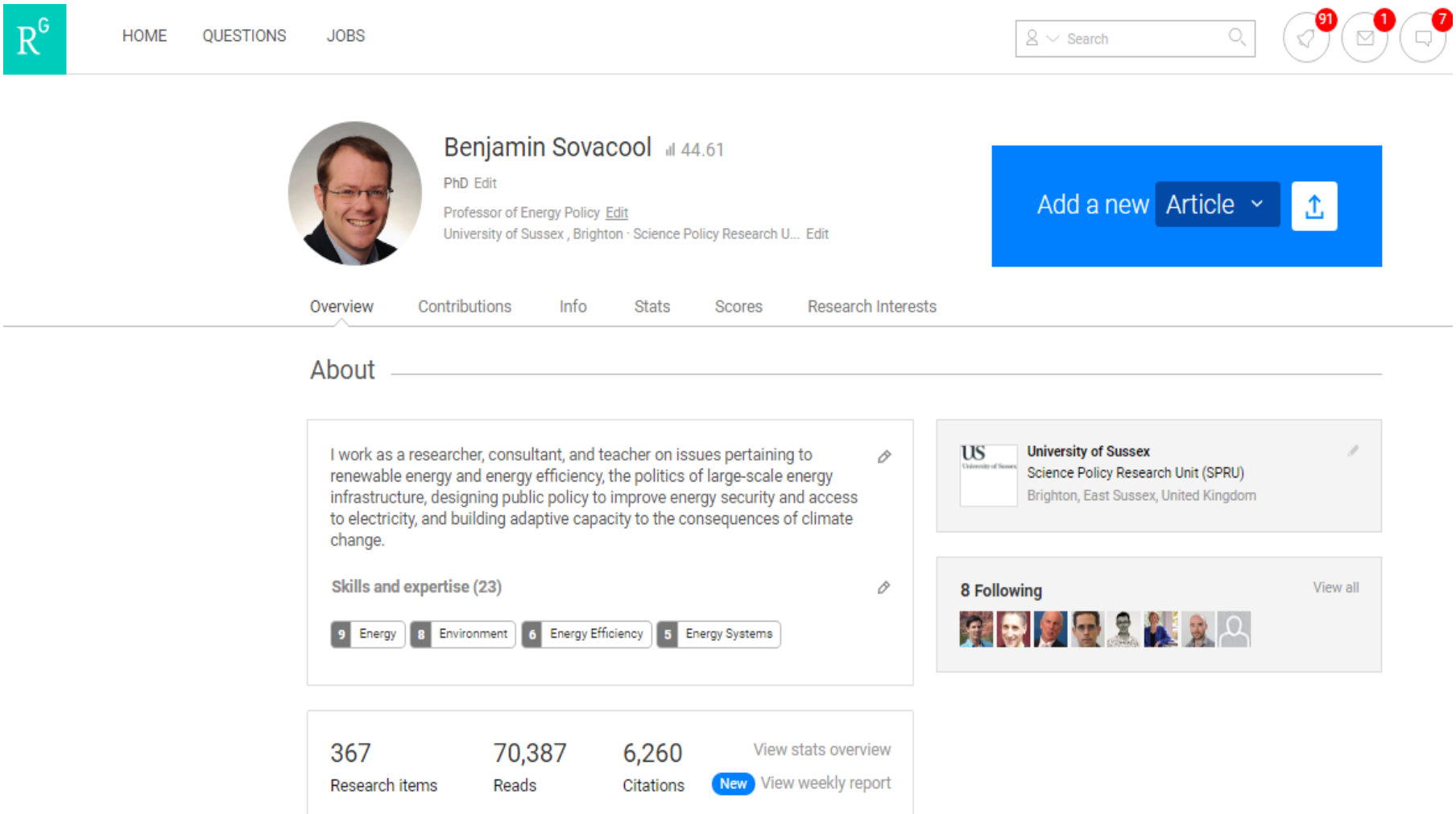

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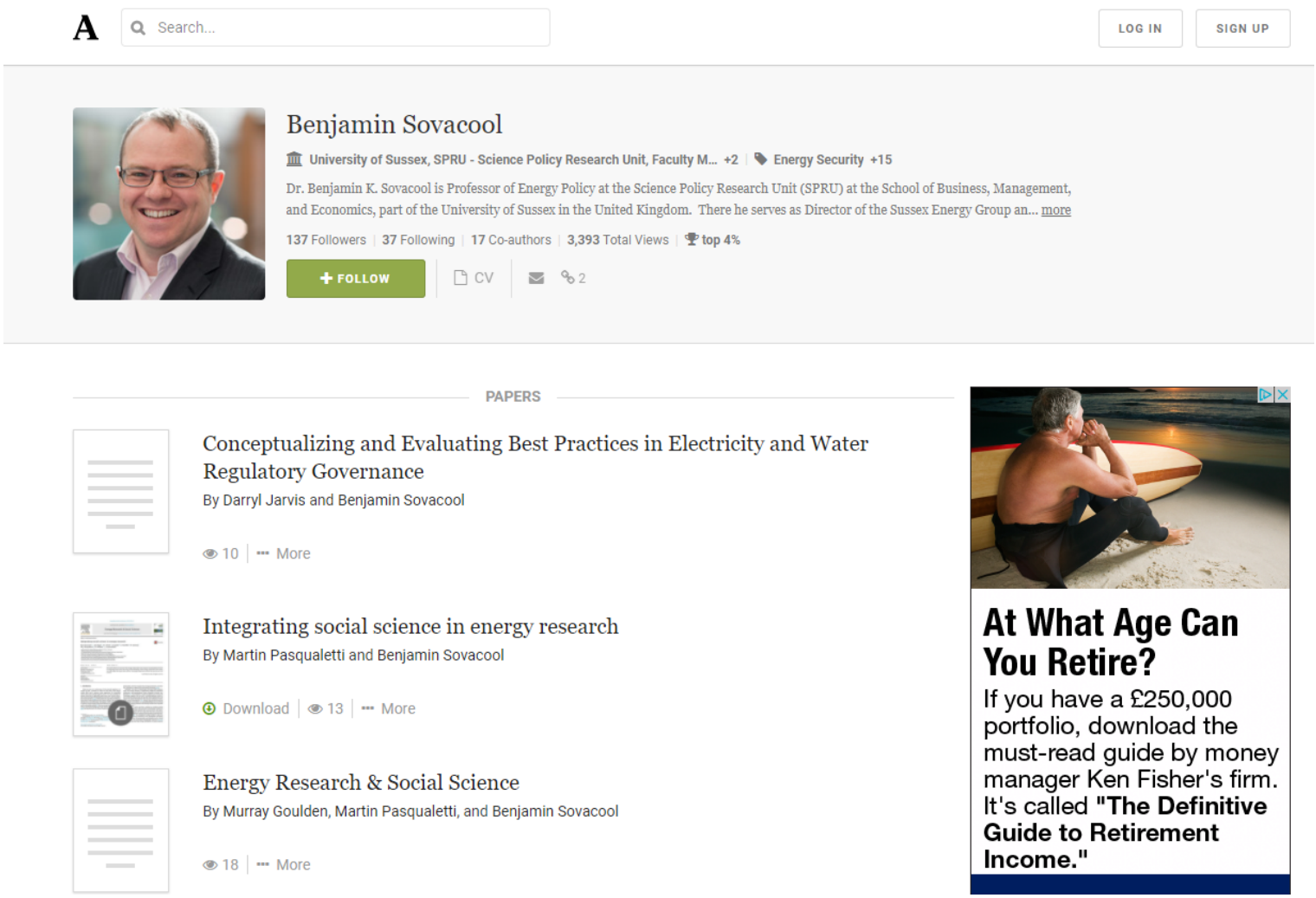

Join online platforms: ORCID

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Country
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Keywords
Electricity, Energy and political economy, Energy justice, Energy policy, Energy security, Environmental law, Environmental sustainability, Nuclear power, Public policy, Renewable energy, Research and innovation, Science policy, Climate change mitigation and adaptation

Websites
Faculty webpage (http://pure.au.dk/portal/da/benjaminso@hih.au.dk)
Aarhus University profile page (http://pure.au.dk/portal/en/persons/benjamin-sovacool(fca10105-c4eb-4f0f-99a7-a354a8a8a47a).html)

Other IDs
Scopus Author ID: 9333655700 (http://www.scopus.com/inward/authorDetails.url?authorID=9333655700&partnerID=MN8TOARS)

Biography
Dr. Benjamin K. Sovacool is Professor of Energy Policy at the Science Policy Research Unit (SPRU) at the School of Business, Management, and Economics, part of the University of Sussex in the United Kingdom. There he serves as Director of the Sussex Energy Group and Director of the Center on Innovation and Energy Demand which involves the University of Oxford and the University of Manchester. He is also Director of the Center for Energy Technologies and Professor of Business and Social Sciences in the Department of Business Development and Technology at Aarhus University in Denmark. He held previous positions at the Vermont Law School, National University of Singapore, and Oak Ridge National Laboratory. Professor Sovacool works as a researcher and consultant on issues pertaining to energy policy, energy security, climate change mitigation, and climate change adaptation. More specifically, his research focuses on renewable energy and energy efficiency, the politics of large-scale energy infrastructure, designing public policy to improve energy security and access to electricity, and building adaptive capacity to the consequences of climate change. Professor Sovacool is the founding Editor-in-Chief for the international peer-reviewed journal Energy Research & Social Science, published by Elsevier, and he sits on the Editorial Advisory Panel of Nature Energy. Professor Sovacool is the author of more than 300 refereed articles, book chapters, and reports, and the author, coauthor, editor, or coeditor of 18 books on energy and climate change topics, including those with MIT Press, Oxford University Press, Cambridge University Press, Johns Hopkins University Press, and the Nature Publishing Group/Palgrave. He is the recipient of the 2015 "Dedication to Justice Award" given by the American Bar Association and a 2014 "Distinguished Visiting Energy Professorship" at the Environmental Law Center at Vermont Law School, and he has received or managed large competitive grants from the U.S. Department of Energy, U.S. National Science Foundation, MacArthur Foundation, Rockefeller Foundation, NordForsk, Energy Technology Development and Demonstration Program of Denmark, and the Danish Council for Independent Research. Professor Sovacool received his PhD in science and technology studies from the Virginia Polytechnic Institute & State University in Blacksburg, Virginia, where he won the "Outstanding Dissertation of the Year" award from the College of Social Sciences and Humanities.

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PRESS RELEASE
Priority: IMMEDIATE RELEASE
Date: FRIDAY 15 APRIL 2016

FOSSIL FUELS COULD BE PHASED OUT WORLDWIDE IN A DECADE, SAYS NEW STUDY

The worldwide reliance on burning fossil fuels to create energy could be phased out in a decade, according to an article published by a major energy think tank in the UK.

Professor Benjamin Sovacool, Director of the Sussex Energy Group at the University of Sussex, believes that the next great energy revolution could take place in a fraction of the time of major changes in the past.

But it would take a collaborative, interdisciplinary, multi-scalar effort to get there, he warns. And that effort must learn from the trials and tribulations from previous energy systems and

Mimic and imitate those you admire

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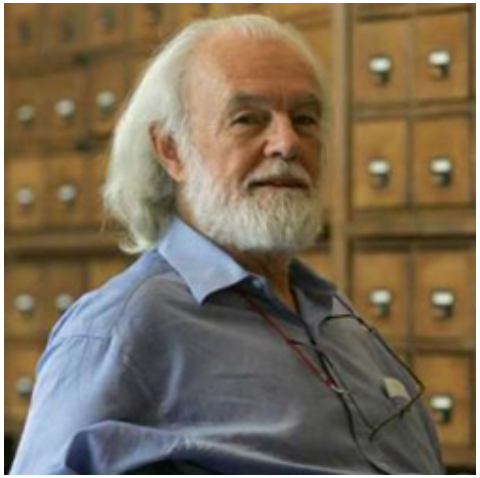
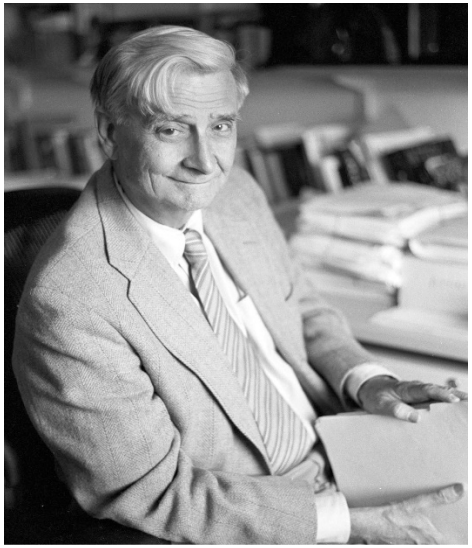
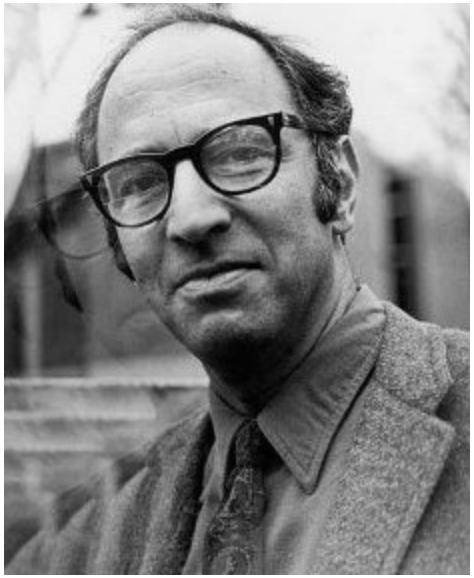


IMITATION
IS THE
SINCEREST
FORM OF
FLATTERY





Mimic "look", structure, feel, framing, execution, etc.

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Research Policy 36 (2007) 399–417

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Typology of sociotechnical transition pathways

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Received 1 August 2003; received in revised form 1 November 2006; accepted 3 January 2007
Available online 20 February 2007

Abstract

Contributing to debates about transitions and system changes, this article has two aims. First, it uses criticisms on the multi-level perspective as stepping stones for further conceptual refinements. Second, it develops a typology of four transition pathways: transformation, reconfiguration, technological substitution, and de-alignment and re-alignment. These pathways differ in combinations of *timing* and *nature* of multi-level interactions. They are illustrated with historical examples.

Keywords: Transition pathways; Sociotechnical regime; Multi-level perspective

Some actionable, near-term suggestions

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1. *Design some articles for maximum impact from the start*
2. *Also realize the value to fecundity and 2-3 contributions a year, "less" excellent*
3. *Choose good journals, with good reputations and impact factors*
4. *Create a Google Scholar account https://scholar.google.co.uk/*
5. *Create a RG profile https://www.researchgate.net/home*
6. *Create a Mendeley Account https://www.mendeley.com/newsfeed/*

Summary: Some actionable, near-term suggestions

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7. *Join Academia.edu https://www.academia.edu/*
8. *Join ORCID https://orcid.org/*
9. *Join SSRN https://www.ssrn.com/en/*
10. *Join Mailing lists (EASSN, STRN, etc.) and then engage, including promoting your own work www.jiscmail.ac.uk/EASSN*
11. *Create peer review/citation "clubs"*
12. *Generate and use different contact lists*

Summary: Some actionable, near-term suggestions

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13. Post publication, translate into press releases and policy briefs

14. Gently mimic (and cite) those you admire, even write to them or write with them

Implications and conclusions

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- **Clearly state objectives**. Good papers explicitly ask a research question (or questions) and/or set out to achieve particular aims and objectives.
- **Be empirically grounded in evidence**. Good research is data-driven, based on a foundation of empirical data rather than opinion (or worse, bias).
- **Have and communicate a research design, aiming for maximum impact**. Good papers are as explicit as possible about the research design and methods employed, cognizant of codes of practice, and appropriate and balanced in their execution.
- **Appreciate multiple methods**. Rigorous researchers will explain how their method compares to alternative methods and approaches. Even better, novel and rigorous research designs can combine at least two complementary methods.

Implications and conclusions

Centre on Innovation and Energy Demand

- **Theorize**. Many good papers connect themselves to social science concepts or theories. They test concepts, engage in debates, and elaborate on conceptual findings about the relationship between energy and society.
- **Address generalizability**. Comparative research (e.g. across technologies, policies, regions) can have broader impact.
- **Be stylistically strong**. Good papers utilize a coherent macrostructure and microstructure, and are written in a way that is crisp, clear and (at times) creative and fun.
- **Emphasize strengths and weaknesses**. Rigorous researchers fully acknowledge, explain, and (when possible) pre-empt limitations in design, case study selection, methods or analysis.

Implications and conclusions

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- As tempting as that list of eight items is, perhaps more important are the underlying principles behind it:
  - **Diversity:** intellectual, theoretical, methodological, empirical
  - **Inclusion**: professional, geographic, disciplinary
  - **Creativity:** experimentation, curiosity, ambition
  - **Reflection:** appreciation or even omniscience of other work, transparency, critical thinking, and modesty

Implications and conclusions

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- Remember that energy social science is both a **science** and an **art**
- It must be not only **logical** but emotionally impactful and **credible**
- It is not only **dialectic** but **rhetoric**
- It is not only **analysis** but the effective **presentation** of ideas to an audience
- While energy social science remains a **collective endeavour**, outstanding research shines when it excels across the three dimensions of novelty, rigor, and style.

Concluding thoughts

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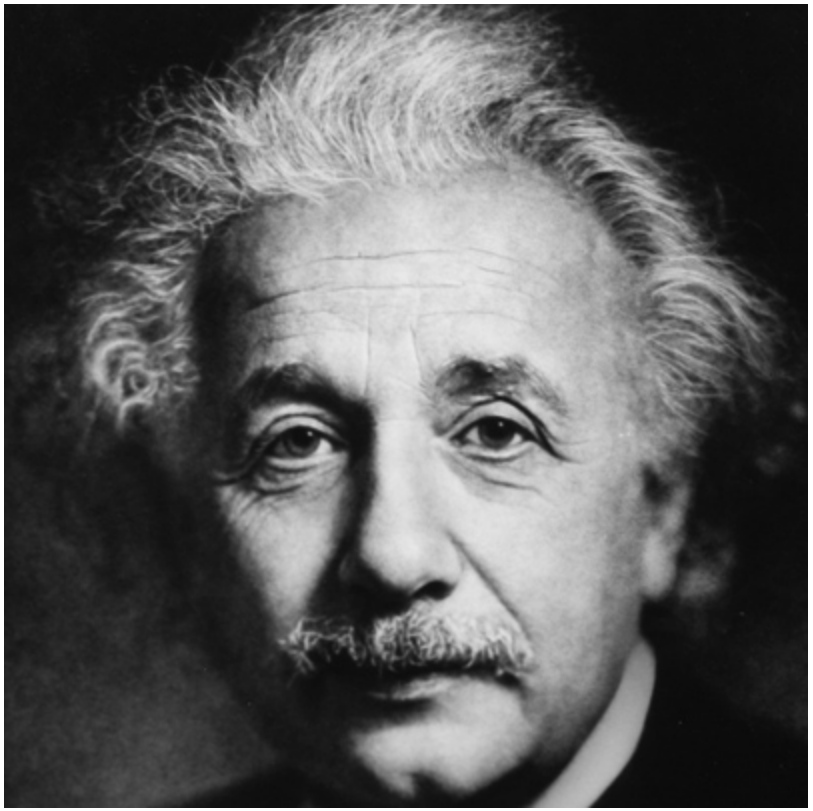
If we knew what we were looking for, it wouldn't be called "re-search."



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