PARI

Academic partner(s) : ENSEA, Sciences Po

Financial partner(s) : Addactis, CCR, Generali, Groupama, Mgen, Thélem Assurances

Scientific director(s) : Pierre François (CNRS, Sciences po), Laurence Barry (CREST)

Website : www.chaire-pari.fr

RESEARCH PROGRAM DESCRIPTION

Chaire PARI is a research program focused on how our perception of risk and uncertainty is impacted by regulation and technological developments. PARI's specificity as compared to other chairs lies in that its position at the liminal encounter of sociology, political science and epistemology. In its first cycle (2015-2018), the program dealt with the impact of the new insurance regulation, Solvency II. The second cycle (2019-2022, due to end 2023/12) is focused on the potential paradigm shift implied by big data and the new technologies for data analysis in insurance.

Since the beginning of the nineteenth century, insurance has indeed accompanied the emergence of statistical tools for the government and management of collective phenomena. It has thus always put data analysis at its core. Some however consider that the latter will be deeply transformed by the datafication of the world and the new algorithms that take hold on data. How then will insurance evolve in such a context? The program aims at giving informed opinions and diagnoses on the desirability, feasibility and potential social consequences of the use of these new models, if and when applied to the insurance practices.

The program has three main axes of research:

- *Pricing practices of personalization in a historical perspective*

There are many potential impacts of big data on insurance practices, an important one being pricing techniques. These however have been affected by technological changes prior to the current big data era; this axis aims at foregrounding prior challenges to pricing brought by "then new" technologies, the kind of issues at stake, the way these were coped with. Our goal is to reconstruct the history of pricing techniques, regulations, and the debates around the models.

This axis relies partly on an unexploited archival fund of one of our sponsors, Groupama.

- *Ethical implication of the new technologies*

Technological changes, we would like to argue, impact our perception of risks but also the imaginaries of the social. Traditionally, insurance technique relied on a large pooling of risks, thus creating a perceived community of fate in front of accidents. The fairness of insurance lied therefore in its capacity to provide security to the community, thanks to the regularity of aleatory events secured at the collective level by the law of large numbers. Big data technologies by contrast aim at personalization; how is our conception

of fairness evolving as a result? Besides, the generalization of scores in business practices, at the core of this personalization, appears as under- theorized; what is the meaning, if any, of such an individual probability? How should we refer to these numbers when dealing with individuals?

Our goal is to contribute to the ethical and epistemological debates on personalization and the use of scores in insurance.

- *Big data: a new business model for insurance?*
Theoretically at least, the shift from groups to individuals, means that the prediction of specific events (accidents, churns, renewals, etc...) becomes possible. Where accidents are concerned, this deeply affects insurance. At the extreme point of this prediction axis, insurance would disappear in the dichotomous partitioning of the population between accidents and non-accidents. Somewhere in the middle, high risks would be charged too high a premium, and would therefore be excluded from coverage. Insurers need therefore to reinvent their practice in view of this new knowledge.

Due to the variety and extent of our subject, and in accordance with our sponsors, the topics are focused on specific lines of business, mainly: auto insurance, natural catastrophes and health insurance.

RESEARCH TEAM

Researchers

Arthur Charpentier (UQAM)
Cyril Benoit (Sc Po)
Stève Bernardin (Paris-Est Marne la Vallée)
Julien Caranton (Grenoble)

Postdoctoral Researchers
Chloé Bérut (Pacte)

Other people involved in the program (e.g. engineers)

Patrick Gandubert (ENSAI)

Not funded by the research program/directly funded by the sponsor

Xavier Vamparys (independent researcher)

Published

1. Benoit C., 2023, "The regulatory path to healthcare systems' financialization," *Journal of European Social Policy* https://doi.org/10.1177/09589287231176776

On the Journal: The Journal of European Social Policy publishes articles on all aspects of social policy in Europe. Papers should make a contribution to understanding and knowledge in the field, and we particularly welcome scholarly papers which integrate innovative theoretical insights and rigorous empirical analysis, as well as those which use or develop new methodological approaches.

2. Massoc E. & C. Benoit, 2023, "A tale of dualization: accounting for the partial marketization of regulated savings in France," *Review of International Political Economy* https://doi.org/10.1080/09692290.2023.2246989

On the Journal: The RIPE has successfully established itself as a leading international journal dedicated to the systematic exploration of the international political economy from a plurality of perspectives.

3. *Barry L. & A. Charpentier, 2023, "*Melting contestation: insurance fairness and machine learning," *Ethics & Information Technology* https://doi.org/10.1007/s10676-023-09720-y

On the Journal: *Ethics and Information Technology* is a peer-reviewed journal dedicated to advancing the dialogue between moral philosophy and the field of information and communication technology (ICT). The journal aims to foster and promote reflection and analysis which is intended to make a constructive contribution to answering the ethical, social and political questions associated with the adoption, use, and development of ICT.

4. Barry L., 2023, "The moral economies of natural disasters insurance: solidarity or individual responsibility?," *Journal of Cultural Economy* https://doi.org/10.1080/17530350.2023.2258909

On the Journal: JCE is concerned with the role played by various forms of material cultural practice in the organisation of the economy and the social, and the relations between them. It offers a unique interdisciplinary forum for work on these questions from across the social sciences and humanities.

5. Barry L., "From Small to Big Data: (mis)Uses of Insurance Premium for the Government of Hazards," *Journal of Cultural Economy, in process.*

On the Journal: JCE is concerned with the role played by various forms of material cultural practice in the organisation of the economy and the social, and the relations between them. It offers a unique interdisciplinary forum for work on these questions from across the social sciences and humanities.

Working papers

WP#29 – Julien Caranton, Déréglementation de l'assurance et expertise. Le cas de l'assurance automobile en France (années 1960-2000)

27/03/2023

WP#30 - Chloé Bérut, L'accès aux données de santé en France : de la création des bases à leur ouverture 'en sourdine' par l'Institut des Données de Santé (période 1990-2010)

27/03/2023

WP#31 – Chloé Bérut, L'accès aux données de santé en France : ouverture en trompe l'œil et industrialisation de l'usage des données (période 2010-2020)

16/05/2023

WP#32 – Xavier Vamparys & Arthur Charpentier, Intelligence artificielle et individualisation des garanties en assurance : échec ou retard à l'allumage ?

30/10/2023

Reports, books, press articles, etc.

"Y a-t-il une discrimination envers les pauvres ? » Revue Risques #133, 02/2023, Arthur Charpentier & Laurence Barry,

Debate on insurance and artificial intelligence, *Revue Risques #135* 09/2023, with Laurence Barry, Jérôme Balmes, directeur pilotage d'activité & technologie chez France Assureurs, Arthur Dénouveaux, directeur de cabinet du directeur général assurances France de Covéa, David Dubois, directeur général adjoint de Prévoir and Eric Sibony, co-fondateur de Shift Technology.

"Melting contestation : insurance fairness and machine learning," Montreal Ethics Institute online 11/2023, Arthur Charpentier & Laurence Barry.

MAJOR COMMUNICATIONS RELATED TO THE RESEARCH PROGRAM

Major academic conferences, invited speaker, etc.

03/2023 – filmed roundtable Reinsurance Hot Topics: From Natural Catastrophe modelling to climate risk management

With : Nicolas Fournier (Sequantis), Jérome Isenbart (CCR Ré), Antoine Mandel (Climafin), David Moncoulon (CCR), animated by Laurence Barry.

12/2023 – International Conference on Social Theory and Insurance, Bologna University.

Laurence Barry (PARI, Paris) – *The Economist or the Actuary? The Far-Reaching Implications of Rational Choice Theory for Insurance*
Pierre François (Sc Po, Paris) – *The old regime (of mutualisation) and the revolution (of big data)*

Events organized by the program

Annual conference - Roundtable "Health data today for tomorrow's world : which uses for which applications ?".

With Emmanuel Bacry, Directeur scientifique du Health Data Hub, Maitre Nathalie Beslay, Avocat associé du Cabinet Beslay+Avocats, spécialiste de l'innovation en santé, Jean-Louis Davet, Président de DENOS Medical Assistance et administrateur exécutif du groupe DENOS, animated by Chloé Bérut.