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BOCCONI UNIVERSITY, KNOWLEDGE THAT MATTERS

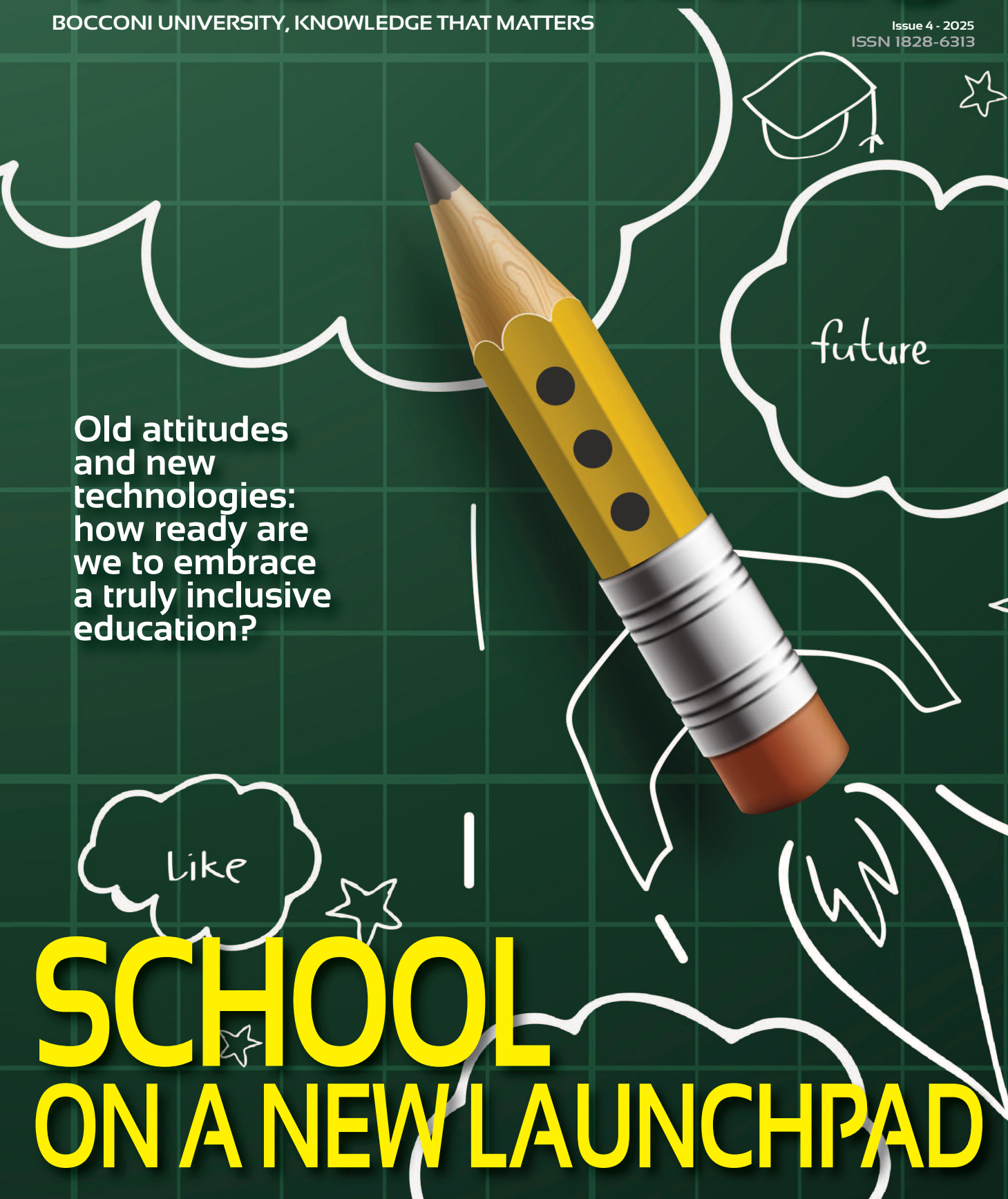
Issue 4 - 2025
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Old attitudes
and new
technologies:
how ready are
we to embrace
a truly inclusive
education?

future

like

SCHOOL
ON A NEW LAUNCHPAD



Bocconi

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This holiday season, celebrate the bond that unites our community.

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We don't need to look back to understand who we are. We understand it by how we look ahead.

For Bocconi, the future isn't a distant horizon — it's part of our everyday work. A collective project built on knowledge, curiosity, and responsibility. Being a university today means more than observing change; it means helping to shape it. It means educating people who can navigate complexity, use technology with critical awareness, and create shared value. It means doing research that doesn't stay confined within disciplines, but engages with society and its challenges — economic, environmental, democratic, and ethical. This is the spirit behind our Strategic Plan 2026–2030: a vision born from listening and dialogue, guiding Bocconi toward an increasingly open, international, and inclusive university. One that measures its impact not only through rankings or numbers, but through its ability to generate ideas,

trust, and opportunity.

Along this path, the Bocconi community remains our greatest strength — not only those who live and work on campus every day, but also those who carry our way of thinking and acting out into the world. The first global reunion, the Homecoming, was a tangible expression of this energy: not a look back, but a step forward. Thousands of people came together to imagine the future and to say, “we're here, and we want to be part of it.”

We close 2025 without taking stock, but with clarity and confidence. Change isn't something that simply happens to us — it's something we build. And Bocconi will keep doing so, as it always has: with the rigor of research, the power of ideas, and the strength of its people.

The future, as always, is something we build together.

Francesco Billari
Rector



HOME

Homecoming 2025: three days of events, from October 16 to 18, marked the grand return home of the alumni who energize the Bocconi community around the world. More than 4,500 participants from over 70 countries, between alumni and their guests, turned the Bocconi campus into a crossroads of experiences, languages, and success stories, brimming with energy and a sense of belonging. Over 100 events took place during the three days, with 18 reunions, 110 speakers, and more than 800 donations totaling over €30,000. The youngest alumna among the attendees was 21 years old, while the oldest participant was almost 104, celebrating 80 years since his graduation

Welcome Ba



ck Home!

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Inside Deciding Minds



From economic theories to cognitive psychology to the impact of voice interfaces, Bocconi research investigates how choices are made in a world where complexity constantly challenges our decision-making criteria



The Illusion of Easy Choice

Our failures don't stem from a lack of information, but from focusing on the wrong details: the real challenge lies not in deciding, but in learning to direct our attention

by Nicola Gennaioli @

I am sitting with my tablet, trying to decide which of two pairs of running shoes to buy. At first glance, the choice seems simple — just two pairs of shoes. But each has many features: weight, durability, arch support, price, brand, style, even celebrity endorsements. One advertises “ultra-lightweight design,” the other “maximum shock absorption” and “sustainable materials.” Both sound appealing, but for different reasons. Just as I start comparing, my phone buzzes: a message, a sale alert, an ad for a new fitness tracker. What looked like a simple choice suddenly becomes tangled in competing demands on my attention. Today, attention is the scarce commodity. Ideally, we should focus only on what matters — in this case the shoes — and ignore distractions. But reality is different.

Research in cognitive science and behavioral economics shows our attention is often hijacked by salient stimuli regardless of relevance. The buzz of a WhatsApp message or a flashy ad can shift focus away from price or quality. Heavily advertised attributes may reframe the choice as “lightweight” versus “shock absorption,” pushing aside other important differences.

COMPLEXITY: A COGNITIVE CHALLENGE

Complexity is not only about the number of options or the computation required, as in a chess game. It is about the flood of features — many irrelevant — our minds must juggle. We cannot filter perfectly. Salient but secondary attributes crowd out critical ones; imperfect recall clouds the picture. The result is two distortions: overcomplication and oversimplification.

Overcomplication: When simple choices become difficult

Straightforward decisions can turn difficult when irrelevant features capture attention. Take branded versus generic drugs. With the same active ingredient and efficacy, price should dominate. Yet many still choose the brand. Dube, Gentzkow and Shapiro (QJE, 2018) show that knowledge of the active principle reduces but does not eliminate demand for branded drugs. Advertising and branding create salience that complicates and sometimes overrides price, the most relevant factor. Finance shows a similar pattern. Instead of adopting simple diversified portfolios aligned with long-term goals, investors chase labels like “high growth” or “safe dividends,” drawn by marketing and headlines. The result is unnecessarily complex portfolios, and often worse.

OVERSIMPLIFICATION: WHEN IMPORTANT FEATURES ARE IGNORED

The opposite distortion arises when people narrow choices too much, focusing only on one or two salient attributes. Health insurance plans illustrate this: premiums and deductibles are highlighted,



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while actual usage — key to estimating out-of-pocket costs — is ignored. Loewenstein et al. (QJE, 2015) show this leads consumers to select dominated plans, worse in every respect once usage is considered (see also Abaluck and Gruber, 2011). Mutual fund investors behave similarly, chasing recent advertised returns while ignoring fees and risk, often more decisive for long-term performance. In these cases, salience causes oversimplification: we don’t just consider too few features, we overlook the most important ones.

THE NATURE OF COMPLEXITY

The key insight is that complexity is not only in the environment but in how our minds perceive, attend to and recall stimuli. Many failures in information-rich contexts are not due to the cost of combining data but to how we choose what to focus on — leading either to overcomplication or oversimplification. This undermines standard competition. First, selective attention itself can create market power: consumers stick to dominated products because they grab attention. Second, competition operates only on salient attributes, not on the truly important ones. Even public information provision or nudges do not fully help: they may be ignored, or affect the wrong consumers, worsening decisions. The pressing question is: which choice and information protocols actually work in stimulus-rich environments? We don’t yet know. But one thing is clear: we won’t find the answer by treating decision-making as mere calculation. To get there, we must take cognition seriously ■

When a Voice Guides Our Choice

From online shopping to healthcare decisions, voice technologies are transforming the way we compare options and evaluate information

by Kurt P. Munz @

Imagine you're at a restaurant. The server rattles off the specials, and by the time they finish, you're already struggling to recall the first dish. Now imagine those same specials printed on a menu. You can glance back, compare ingredients, and weigh your options at your own pace. While the difference may seem trivial, new research shows it can shape not only how we evaluate information, but also the choices we make.

With the rapid rise of voice assistants like Alexa and Siri, more of our decisions are being mediated by spoken words rather than written text. From shopping to customer service, we're increasingly listening rather than reading. In a new working paper, I investigated this topic with my co-author Vicki Morwitz from Columbia University. Our studies, involving more than 4,000 participants, reveal that this shift in medium has subtle but meaningful effects on judgment and decision-making. The reason lies in how our minds process information. Text has an advantage: it stays put. You can reread a



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sentence, compare numbers side by side and look back if you forget. Speech, in contrast, is fleeting. Once words are spoken, they vanish, leaving listeners to hold the details in memory. This difference becomes especially important when we need to compare options, a situation where memory matters most.

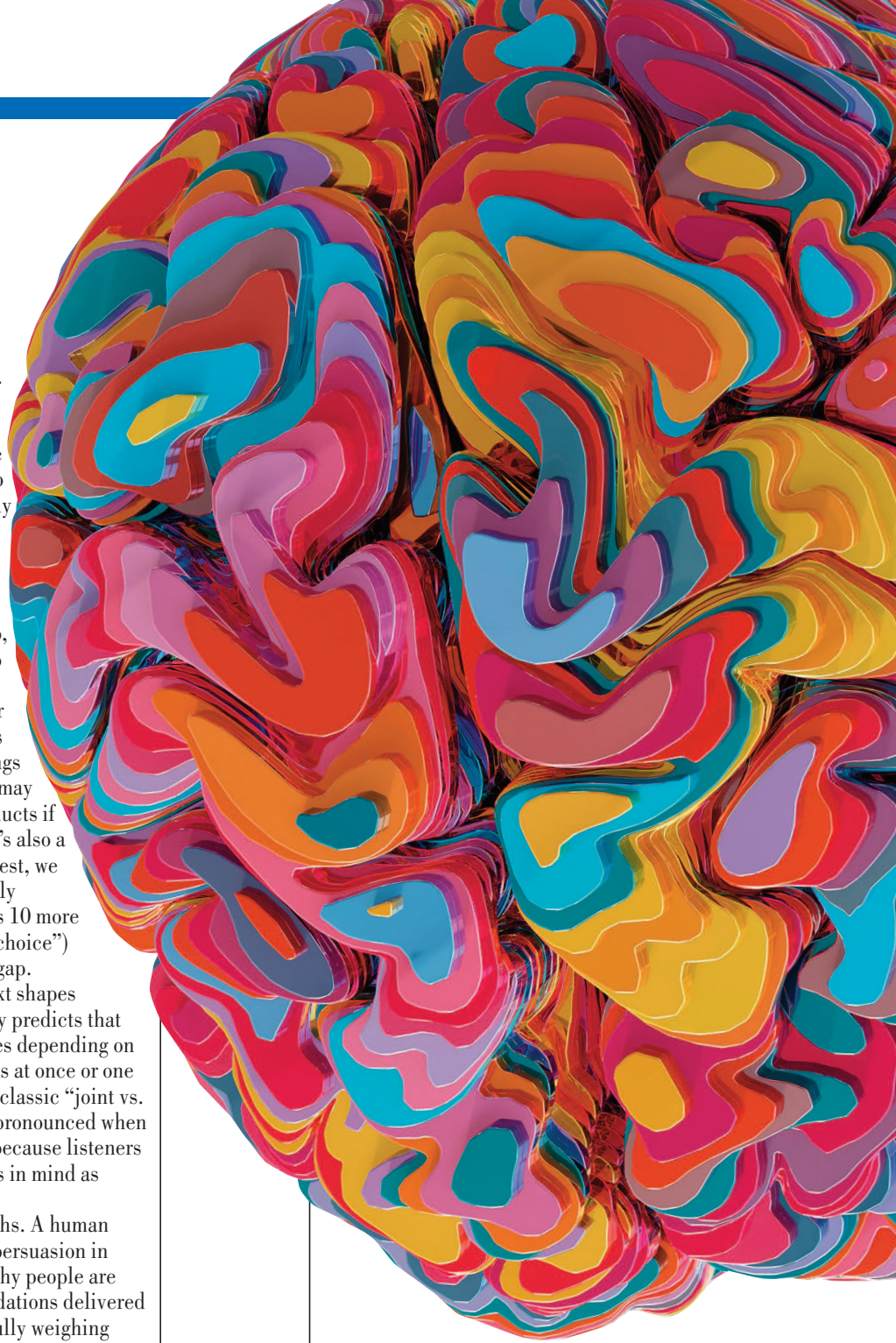
For comparative judgments, some information is easy to interpret on its own, like when you see "brand new" or "recommended" in a product description. Other information only makes sense with comparison. Are 20,000 entries in a dictionary a lot? Only if you know that another dictionary has 10,000. This latter kind of information, known as low-evaluability information, plays a central role in many real-world choices.

Our experiments show that listeners struggle more than readers to use low-evaluability information when comparing options. As a result, their evaluations tend to be less extreme. When the information is favorable, listeners are less enthusiastic than readers; when it's unfavorable, they are less harsh. In one study, for example, participants were told about a multivitamin's ingredients and whether they met or missed recommended benchmarks. Readers were quick to spot when the vitamin was better or worse than the benchmark. Listeners, however, found it harder to keep the details straight, and their ratings fell closer to the middle.



THE PAPER

Speech and Evaluability: How Listening to Options Can Affect Choices and Evaluations, by Kurt Munz and Vicki Morwitz



This difficulty doesn't just affect opinions, it also influences behavior. In another experiment, participants were asked to reorder snack bars described in either text or voice. The previous product was unavailable, so a new one was offered that was clearly an upgrade: larger bars, better nutrition, and higher customer reviews. Most readers chose to accept the substitute. But listeners were significantly less likely to do so, apparently because they struggled to process the comparative advantages. The implications extend to consumer behavior and beyond. For companies betting on voice shopping, our findings suggest a hidden barrier: customers may be less likely to switch to better products if they only hear about them. But there's also a potential solution. In one follow-up test, we found that phrasing offers in explicitly comparative terms ("this product has 10 more grams of protein than your previous choice") helped listeners bridge the memory gap. The results also highlight how context shapes decision-making. Evaluability theory predicts that people often reverse their preferences depending on whether they evaluate several options at once or one at a time. Our work shows that these classic "joint vs. separate" preference shifts are less pronounced when people listen instead of read, again because listeners can't hold all the comparative details in mind as easily. Listening, of course, also has strengths. A human voice can carry warmth, urgency or persuasion in ways that text cannot. That may be why people are often more influenced by recommendations delivered out loud. But when it comes to carefully weighing trade-offs, speech can make it harder to use important (but less easy-to-evaluate) pieces of information. As voice technologies continue to spread into shopping, healthcare, education and everyday decision-making, it's worth remembering that listening and reading are not interchangeable. Each

mode nudges us toward different ways of thinking. Our findings suggest that designers of voice systems should take these differences seriously. Sometimes, the smartest choice may simply be to put it in writing ■

When Models Are Wrong

A new Bocconi study proposes a quantitative criterion for making robust decisions under uncertainty, when economic, climate or financial models could be misspecified versions of reality

by Barbara Orlando @

Decision makers — in economics, politics and finance — always take decisions under uncertainty. But there are different kinds of uncertainty. It's one thing not to know how inflation will fare in the coming months, and another not to know whether the models we're using to forecast the variable make any sense.

Consider a central banker who must calibrate interest rates: he will use macroeconomic models to estimate the effects of his decisions. But those models — with all their equations, assumptions and scenarios — are simplified and partial versions of reality. They may be “useful,” but they are inevitably wrong. Or again: a government must decide whether and how to tax CO₂ emissions. It relies on climate scenarios, constructed by different scientific communities, using different models. But who can say whether these models truly capture the most relevant dynamics? And yet, decisions always need to be made.

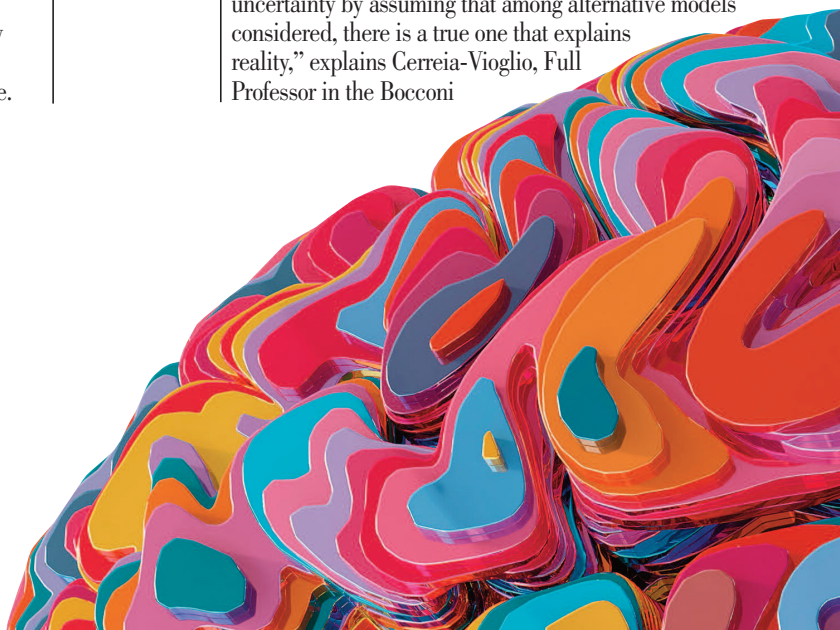


SIMONE CERREIA-VIOGLIO
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But what happens, and how should we proceed, when the models we have not only offer probabilistic and non-deterministic predictions, but are perhaps also misspecified — that is, they don't include all the variables needed to represent reality with sufficient fidelity?

This question is addressed in the study ‘Making Decisions Under Model Misspecification’, published in *Review of Economic Studies*, by **Simone Cerreia-Vioglio** (Bocconi University and IGIER), **Lars Peter Hansen** (University of Chicago, 2013 Nobel Prize in Economics), **Fabio Maccheroni** and **Massimo Marinacci** (Bocconi University and IGIER).

“Many approaches in decision theory address model uncertainty by assuming that among alternative models considered, there is a true one that explains reality,” explains Cerreia-Vioglio, Full Professor in the Bocconi



Department of Decision Sciences. “But in practice, we know that, very likely, none of the available models is the true model. They are all approximations. Our work attempts to build a more rigorous and prudent way to make decisions in such context.”

A SAFETY BELT AGAINST FLAWED MODELS

The study proposes a new decision criterion that takes into account not only the variety of available models — as “ambiguity-averse” approaches already do — but also the possibility that all of them are systematically flawed. To do so, it distinguishes between:

- structured models, i.e. those on which the decision maker has built hypotheses based on data, theories and assumptions (for example, a climate model or a financial model with uncertain parameters);
- unstructured models, constructed solely as “stress tests” to assess the consequences should the structured models fail.

The idea is to introduce a penalty that increases as the “statistical distance” between a plausible model and the most extreme ones increases, used as a form of protection against specification errors.

“These unstructured models aren’t credible in the usual sense: we wouldn’t use them to forecast GDP or interest rates,” explains Cerreia-Vioglio, “but they help us understand how sensitive a decision is to errors hidden in structured models. In a sense, they act as a safety belt.”

A CONCRETE EXAMPLE: INVESTING IN AN UNCERTAIN ECONOMY

In the paper, the authors present an example from macroeconomics: an investor must choose an intertemporal consumption and investment plan,



THE PAPER

Making Decisions Under Model Misspecification,

by Simone Cerreia-Vioglio, Lars Peter Hansen, Fabio Maccheroni, Massimo Marinacci

but the economy follows an uncertain technology path, represented by an unknown parameter. The different values of this parameter correspond to the structured models. The decision maker, however, isn’t confident that the true parameter is actually among those included. Applying the proposed criterion, the investor evaluates the possible options by taking into account not only the average return predicted by the “known” models, but also the possibility that they are poorly calibrated — and penalizes plans that would prove very costly if the models were actually incorrect.

A SOLID THEORETICAL FRAMEWORK WITH PRACTICAL IMPLICATIONS

The work is based on a rigorous axiomatic framework which distinguishes between two levels of preferences:

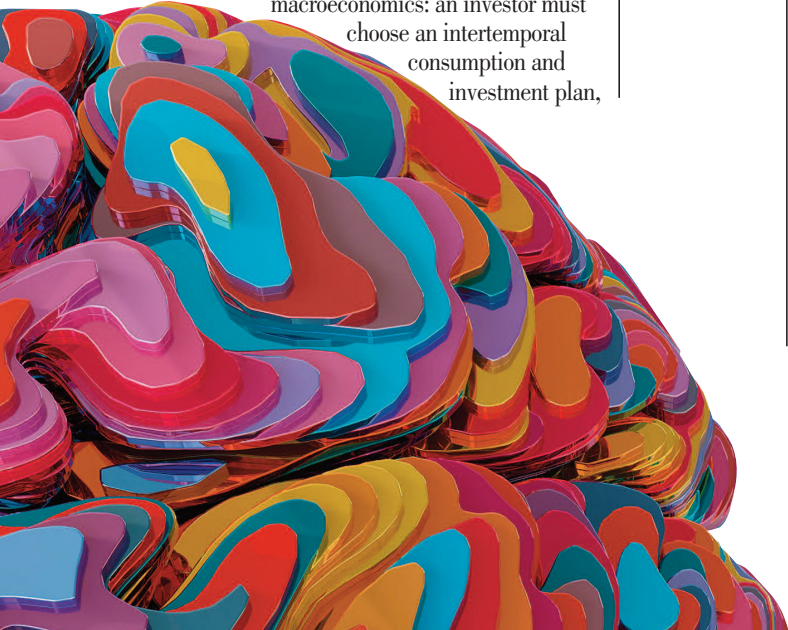
- a mental and incomplete preference, which reflects the decision maker’s genuine doubts and preferences;
- a behavioral preference, which is what the decision maker would do if they were forced to choose.

This dual level allows us to model the fear that the models are wrong, separating it from the uncertainty between having to choose between alternative models. The result is a new class of decision criteria that generalize classical ones (such as expected utility and Waldman max-min) and can also incorporate elements of Bayesian learning.

AND NOW?

Possible applications range from climate policy to economics and finance. Whenever models are used — and there is a fear that they are wrong — this approach can be applied: it can offer theoretical support for better decision-making.

“We can’t avoid using the models we know,” concludes Cerreia-Vioglio. “But we can make better use of the uncertainty surrounding them. Our goal is to provide tools for more informed decision-making, knowing that reality always outplays modeling to some extent” ■



The Invisible Scars of Terrorism

People who witness terrorism in their formative years can experience a loss of trust in society and institutions. A Bocconi study reveals the long-term effects of terrorism on individual psychology and social cohesion

by Michela Braga @



MICHELA BRAGA
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Can a terrorist attack permanently alter the way we view others and live in society? According to a recent study, published in *Economic Development and Cultural Change*, which I conducted with **Elisa Borghi** and **Francesco Scervini**, the answer is yes. Terrorism leaves deep scars on the personality: events experienced during the formative years of life (adolescence and early adulthood) influence trust in others even decades later. The study's findings, which highlight the long-term effects of terrorism on social capital, appear particularly significant when interpreted in light of today's global context, increasingly marked by insecurity and polarization. We cross-referenced data from the World Values Survey, which measures interpersonal trust, with data from the Global Terrorism Database, which records terrorist attacks and victims of acts of terror worldwide since 1970. The analysis is based on a sample of over 210,000 individuals interviewed in 107 countries, born between 1954 and 1993.

The core of the research is the psychological hypothesis of the 'impressionable years' model, according to which values and attitudes are formed primarily between the ages of 15 and 25, when personality is most flexible and social experience is most intense. It is in this crucial stage of life that we construct what psychologists call the emotional maps through which we interpret the world. Collective experiences of fear or violence, experienced during these years, tend to become embedded in an individual's emotional memory and have a lasting influence on our perception and trust of others. It is precisely during this period that traumatic events such as wars, economic crises, natural disasters or terrorist attacks can leave a profound and lasting impact on one's perception of society and interpersonal relationships. The analysis shows that those who lived in countries affected by attacks through their impressionable years, as adults tend to trust others

e rorism

less. This effect is not observed when exposure to these events occurred in childhood or adulthood, confirming that the impressionable years are precisely the window of time during which individual values are consolidated.

The study's results show that this is not a transient effect: even controlling for age, income, education, religion and country characteristics, the impact remains statistically significant. The loss of trust increases with the frequency and severity of attacks: being exposed to a greater number of events or to more lethal events increases the perceived sense of insecurity. The passage of time does not help erase these effects: the collective memory of the years of terror continues to influence the generations who lived through them, modifying behaviors and expectations towards others. The political context, however, is crucial, as is the nature of terrorist events. Both domestic and international terrorism reduce interpersonal trust, but to varying degrees. International attacks produce a more pronounced and persistent effect, while domestic attacks are perceived as part of internal conflicts and, therefore, in some cases, can even generate temporary group cohesion. The overall impact of both types of terrorism is, however, stronger in authoritarian countries than in democratic regimes. In more democratic countries, institutions appear capable of mitigating the loss of trust: civic cohesion, freedom of the press and the ability of authorities to respond transparently help rebuild social bonds. Conversely, in authoritarian or fragile regimes, attacks deepen mistrust and amplify divisions.

In an era marked by a global decline in the trust placed in institutions, the media and even fellow citizens, understanding how traumatic shocks influence its formation is essential to developing effective policies to rebuild social capital. Trust is a fragile but crucial collective asset: it reduces transaction costs, fosters cooperation, and supports economic growth and democratic stability. After an attack, it's important to focus on adolescents and young people to avoid long-term negative effects. Terrorism doesn't just destroy lives or infrastructure: it erodes the invisible fabric that holds societies together. Rebuilding it requires time, awareness and strong institutions.

In times of fear and uncertainty, nurturing trust is not only a moral objective: it is a necessary condition for the democratic and economic health of societies ■



The Algorithm That Optimi

A Bocconi University study introduces a new method for making effective decisions by consulting just one among several predictive models — cutting down costs and complexity. Applications span automated factories, smart networks and energy optimization systems

by Barbara Orlando @

In the world of industrial automation, network management and real-time decision-making systems, artificial intelligence and machine learning technologies are increasingly used to anticipate events and suggest optimal actions. The problem? Sometimes we have several predictive models available, each tailored to different scenarios. But querying all of them, all the time, is too costly — in terms of computation time, energy or operational complexity. So how do we decide which model to consult and whose advice to follow, if we can't know in advance which will perform best in each situation? That's the question tackled by a recent study by Marek Eliáš, Assistant Professor in the Bocconi Department of Computing Sciences, and Matei Gabriel Coşa, a student in the Master of Science in Artificial Intelligence at Bocconi. Their work addresses a classic problem in theoretical computer science — Metrical Task Systems (MTS) — but from a new perspective, one that is much closer to the practical challenges posed by AI in complex systems.

A COMMON CHALLENGE: DECIDING WITHOUT KNOWING EVERYTHING

Imagine an automated factory that must decide, every second, how to configure its machines to minimize costs and production times. It has several predictive models to



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choose from: one excels under stable conditions, another handles sudden demand shifts well and a third is specialized in energy efficiency. However, each of these models is complex to compute, and using all of them simultaneously at every moment is just not feasible. This is a concrete example of what the authors call “bandit access to multiple predictors:” we can query only one model at each step. Yet we still want to make decisions that are almost as good as if we had consulted the best model every time.

THE CHALLENGE: LEARNING TO CHOOSE THE RIGHT ADVISOR

Eliáš and Coşa's study proposes a new algorithm capable of learning, over time, which model to follow — even without full access to all information. “The mechanism is similar to that of a slot machine,” explains Eliáš. “Each model is like a lever. Pulling it — i.e. querying that model — gives us a certain result. But unlike a casino, the ‘reward’ here isn't immediately clear, and it may depend on what we did in the previous steps.” To make the problem more realistic, the authors also assume that understanding a model's behavior may require querying it multiple times in a row — like an expert who needs a few moments to study the context before offering a sound opinion.

izes Real-Time Decisions

THE RESULT: LESS WASTE, MORE EFFICIENCY

The algorithm they developed can asymptotically match the performance of the best available model — without knowing in advance which one that is. “In practical terms,” Eliáš notes, “this means an automated system could adapt on its own to choose the most suitable model for each situation, minimizing both computational costs and decision errors.” The key strength of the result lies in its robustness: even if only one of the models is actually good, the algorithm learns to follow it. And in cases where the models are all imperfect but complementary — each one performing well in different subsets of situations — the algorithm adapts accordingly, switching “advisors” when needed.

WHY IT MATTERS

This line of research is especially relevant today, when intelligent systems are increasingly “augmented” by predictive models, but where efficient management of

information is crucial. Application areas include:

- Network traffic management: deciding how to route data packets by choosing among traffic prediction models.
- Caching and memory systems: dynamically selecting which data to keep in memory, using models that estimate reuse likelihood.
- Energy optimization in data centers or smart buildings, where various models try to predict consumption, loads or user behavior.

In all these cases, being able to consult just one model at a time while still achieving near-optimal results is a strategic advantage: it cuts costs, increases efficiency and maintains high performance.

THEORY THAT SERVES THE REAL WORLD

Although the study is theoretical — with mathematical proofs and formal performance bounds — its implications are far from abstract. “As is often the case,” concludes Eliáš, “formalizing a problem is what opens the door to solutions that are generalizable and applicable across very different contexts.” This research shows how cutting-edge work in algorithms and machine learning can help build smarter, more adaptive and more efficient decision-making systems — right where they’re most needed: in factories, servers and control systems that keep the digital and physical worlds running ■



THE PAPER

Learning-Augmented Algorithms for MTS with Bandit Access to Multiple Predictors, by Matei Gabriel Coșă and Marek Eliáš

Corporate Silence

To protect their digital secrets, many firms are beginning to withhold scientific knowledge. Yet in trying to shield themselves from the risk of cyberattacks, they end up obscuring collaboration and slowing progress

by Tim Martens @



TIM MARTENS
Assistant Professor
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In today's hyperconnected world, cybersecurity threats are no longer mere nuisances, they're reshaping how businesses behave, innovate and communicate. Recent research sheds surprising light on this phenomenon, highlighting an invisible yet powerful impact: companies are drastically cutting back on publishing scientific research to avoid attracting cybercriminals. Think of it like turning off a porch light to avoid unwanted visitors. According to a study conducted by me together with Christelle Alkhoury, Xiaochi Ge and Christoph Sextroh, companies facing increased cybersecurity threats significantly reduce the number of scientific publications, essentially dimming the spotlight on their intellectual



THE PAPER

Becoming Invisible? Data Breach Risk and Corporate Scientific Publications, by Tim Martens, Christelle Alkhoury, Xiaochi Ge, Christoph J. Sestroh

property. The logic is simple but powerful: if you broadcast your most valuable ideas, you risk catching the wrong kind of attention.

Data breaches have skyrocketed in frequency and severity. IBM's report showed that the average global cost of a single breach climbed to a staggering \$4.88 million in 2024. Even more troubling, nearly half of these breaches directly targeted intellectual property. With cybercrime increasingly targeting scientific and technological innovation, firms have responded defensively, choosing silence over sharing.

But what exactly does becoming more secretive mean for innovation and the economy? When companies stop publishing scientific discoveries, the whole ecosystem of innovation suffers. Innovations build upon each other; ideas spark new inventions, attract investments and stimulate economic growth. Cutting back on publications interrupts this chain, resulting in what researchers call a "substantial indirect economic cost."

Some firms are using strategic disclosures, publishing enough to protect their innovations from being claimed by others, while keeping truly sensitive data behind closed doors. By strategically controlling what they disclose, companies are attempting to manage risk without entirely surrendering the benefits of openness.

According to the study, just one cybersecurity breach in an industry can reduce scientific publications significantly, representing a substantial loss in potential innovation and economic productivity. The researchers estimated that this kind of secrecy costs society hundreds of thousands of dollars per breach, beyond the immediate financial damage companies incur directly from cyberattacks.

Interestingly, the risk isn't uniform across all breaches. We found that when breaches involve personal details like employee passwords, companies become even more guarded. It seems firms aren't just protecting their ideas but also their employees, whose identities, when exposed, can lead to devastating intrusions.

Clearly, cybersecurity threats are reshaping the landscape of corporate innovation. Companies are becoming more cautious, striking a delicate balance between necessary transparency and protective secrecy. Policymakers face a critical challenge: how to secure valuable intellectual assets without stifling innovation.

Another hidden consequence of this shift toward secrecy is the potential talent drain it might provoke. When companies limit their openness about scientific research, they become less attractive workplaces for leading researchers and innovators who thrive on collaboration, recognition and the exchange of ideas. This could eventually drive top talent towards more open environments, inadvertently weakening the very innovation firms are trying to protect.

Moreover, the growing secrecy around scientific advances could unintentionally erode public trust. Transparency builds confidence among investors, consumers and partners. If companies begin withholding too much information, stakeholders may question their commitment to openness and accountability, potentially impacting brand reputation and long-term success.

The broader takeaway is a sobering reminder that cybersecurity isn't just a tech issue but also a fundamental economic concern. If companies retreat too far into secrecy, we all lose out on innovation's promise. Perhaps the real solution lies in strengthening cybersecurity defenses and improving how companies and regulators respond to breaches, rather than hiding away critical scientific advances.

Ultimately, finding a way forward requires businesses, researchers and policymakers alike to engage openly about the risks and rewards of sharing knowledge in our digital age ■



THE BOOK

In the digital age, cybersecurity has become a matter of survival. Today, companies that underestimate cyber threats risk succumbing to increasingly organized and sophisticated enemies. "Cybersecurity per manager" by Antonio Giannino approaches cybersecurity from a management perspective, translating complex concepts into concrete, accessible strategies. From SMEs to large corporations, every organization today finds itself in the crosshairs of cybercriminals (Egea, 2025, 178 pages, in Italian).



An Invisible Giant

A Bocconi study, published in the Business History Review, explains how Luxembourg became a global financial hub. The case study shows how small countries can turn marginality into an advantage, thanks to the cohesion between economic and political elites, regulatory flexibility and specialization in mutual funds

by Barbara Orlando @



The power of small states is not measured in absolute numbers, but in their ability to navigate global markets with agility. This is one of the lessons emerging from the paper *Business-Government Networks in Small States: The Emergence and Evolution of the Luxembourg Global Mutual Fund Industry, 1945–1988*, by Valeria Giacomini (Bocconi University) and Matteo Calabrese (a Bocconi postdoc at the Free University of Berlin), published in *Business History Review*. The study employs the case of Luxembourg to explain a broader phenomenon: how close relationships between political and economic elites can foster trajectories of specialization in small states. The Grand Duchy, now second only to the United States for size of mutual fund assets under management, has become a strategic hub for European and global finance since the 1960s, despite (or perhaps thanks to) its small size. “Our goal was not to propose policy models, but to understand what enables certain small states to sustain competitive advantage over time,” explains Valeria Giacomini, Assistant Professor of Business and Global History. “Luxembourg offers an interesting case of ‘managed intimacy,’ where personal relations and cohesion between public and private actors contribute to regulatory sophistication and financial attractiveness.”

A STRATEGY BUILT ON RELATIONS, NOT SIMPLY RULES

The story told in the paper starts in the 1930s,



VALERIA GIACOMINI
Assistant Professor
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when Luxembourg’s legislation began to offer tax advantages to international investors in “holding companies.” But it was in the postwar period, and particularly in the 1950s, that a close network of notaries, business lawyers and politicians incubated the birth and growth of the mutual fund industry. These people had hybrid profiles, often holding positions in both the public and private sectors, and managed to orchestrate a string of legislative decisions and legal interpretations (such as that of the 1929 law) to make Luxembourg a fertile ground for foreign capital. One of the key elements highlighted in the article is the concept of “bifurcation of sovereignty:” small states creating an area of lesser fiscal and normative regulation within their own borders, open to foreign investment, while formally maintaining consistency with EU laws. This strategy has allowed Luxembourg to become an offshore finance hub despite being a founding member of the European Union. “Luxembourg has developed a unique form of governance, where informality has not impeded efficiency, but has rather fostered it. Local elites have been able to use EU rules to their advantage, applying them selectively,” observes Giacomini.

POWER IN POWERLESSNESS

The research also offers a broader reflection on the condition of small states, traditionally perceived as vulnerable and dependent on external powers. According to the literature, however, these same characteristics can become

leverage: the small size allows for faster decision-making processes, greater regulatory flexibility and stronger cohesion between public and private actors. In the case of Luxembourg, these conditions have favored “specialization without labor,” focusing on capital-intensive sectors such as financial services. This has been compounded by the involvement of foreign experts in the legislative process, such as Belgian economist Jeanne Chèvremont, who contributed to the drafting of the 1988 law on mutual funds and its timely translation into legal English: “A veritable marketing tool,” she recalls in an interview with the authors.

REFLECTIONS BEYOND LUXEMBOURG

The paper raises a critical point: the practices that have supported Luxembourg’s growth and its specialization in investment funds — such as tax avoidance or the systematic acceptance of conflicts of interest — are also problematic from an ethical perspective. They are not proposed as “best practices,” but as key elements to understand how smaller economies can build competitive advantage. The conclusion also lends itself to comparative scenarios: “Further investigation is needed into cases of other small states, such as Ireland,” the authors suggest in the conclusion, “to understand whether this model is replicable or whether its success is due to a unique set of historical and political circumstances” ■



THE PAPER

Business-Government Networks in Small States: The Emergence and Evolution of the Luxembourg Global Mutual Fund Industry, 1945–1988, by M. Calabrese, V. Giacomini

Riding the Wave of

The Grand Duchy has carved out a leading role in global finance and currently enjoys a triple-A rating thanks to its political stability and international openness, explains Andrea Prencipe, Bocconi alumnus and CEO of YT Investor Services. The real challenge now? Attracting more talent

by Andrea Celauro @

A country that has managed to reorient its financial industry to the sound of transparency and green finance, leaving the image of tax haven behind. This is Luxembourg, which today is one of the most important financial centers in Europe and a bridge between international markets. Not without facing difficulties and challenges for the future, says Andrea Prencipe, Bocconi alumnus, CEO of YT Investor Services, and Chairman of Satispay Europe, who has lived and worked in the country for over 25 years.

→ *What features of Luxembourg’s financial and regulatory system make the country particularly attractive to international investors today?*

Certainly, political stability: a country where political parties aren’t in constant conflict and alternation in power is a very soft process. This ensures that Luxembourg is one of the ten countries in the world still enjoying a triple-A rating on financial markets. And it also ensures there are no particular social tensions: as in the rest of Europe, we are discussing pension system reform, but everything is happening gradually, without conflicts or strikes. Furthermore, political stability is accompanied by regulatory stability. But beyond this, there are two other elements that make Luxembourg competitive in financial markets.

→ *And they are?*

The first is the international environment. A



Global Finance from the Heart of Europe

multilingual ecosystem in which Luxembourgers make up approximately 50% of the population and are particularly concentrated in the public sector. There are three official languages in the country. This international environment has been developing since the 1960s, with the introduction of Eurobonds. Incidentally, the Eurobond market was launched thanks to the Italians: the first ever Eurobond was issued by Autostrade per l'Italia. All of this has favored and facilitated the development of investment funds.

→ *And the second element?*

The ability to strategically reorient itself. It's true that in the past, banking secrecy and favorable tax regimes contributed to the development of Luxembourg as a financial hub — so much so that even today some people still consider Luxembourg as a tax haven, although this hasn't been true for many years. The country has been able to refocus its financial industry on other aspects, such as transparency, cross-border distribution of investment funds and sustainable finance. The Luxembourg Green Exchange is now the most important specialized platform globally for trading securities in sustainable finance.

→ *Are there similarities with the development of other small states?*

There are certainly similarities with Switzerland and Singapore — I'm thinking of political stability — or with Ireland and Malta, but there are also clear differences: Singapore's financial marketplace is more oriented toward Asian markets, while Luxembourg's is more global and, for example, Ireland has developed a stronger specialization in alternative funds and hedge funds. But perhaps Luxembourg's truly distinctive trait is its ability to build a true brand for itself as a financial center.

→ *How important are technological innovation and fintech (thinking of your experience at Satsipay)?*



ANDREA PRENCIPE
Alumnus Bocconi,
CEO of YT Investor
Services

today in maintaining and strengthening Luxembourg's role as a competitive financial hub?

There's certainly a clear vision that the fintech world is extremely promising. Luxembourg therefore has a strong desire to present itself and make itself attractive as an international fintech hub (and the government, led by the Grand Duke, is actively promoting this abroad). However, despite these efforts, the results are still somewhat of a work in progress, especially for early-stage ventures, for which Berlin, London or Paris are more attractive ecosystems. Where Luxembourg becomes more interesting, however, is when it comes to scale-ups, viz. my experience with Satsipay.

→ *So, let's talk about your personal experience.*

When and how did you arrive in Luxembourg?

I arrived in 2000, and let's just say I didn't work in Italy for long. As it often happens, I said to myself, "Let's go abroad and gain experience, maybe just for a couple of years." I've stayed for 25 years. It's a recurring story among expats here. In those years in particular, the opportunities offered by a burgeoning financial center like Luxembourg were enormous. With the possibility of job changes and career advancements that in Italy unfortunately were foreclosed or came only after many years. The advantage of living in a small country, which has a population smaller than the province of Varese, is that it is always in need of new people. This, among other things, constitutes one of the challenges for Luxembourg's future.

→ *What is it?*

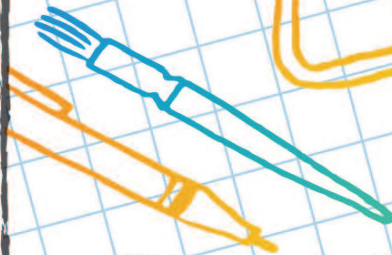
The challenge the country has always faced: attracting human capital. One of the major limits to Luxembourg's growth has been the difficulty to find talent for hire. Making itself increasingly attractive to international human capital will be crucial ■

INSID SCHOOL INCLU EXCLUS DECIS

From classroom discrimination to test prep, to frontal teaching, four studies by B... with Yellowtech's founder serve to open... They show the permanence of gender... of children excluded from networks... of smartphones and AI on shaping... and adolescents. A journey through... the education system's pro...

THE SYSTEM: SION ION AND IONS

Teacher bias, from Artificial Intelligence
Proconni researchers and an interview
on the black box of the school system.
Learning gaps in grades, the adverse effect
of networks of friends, and the effects
on the individual destinies of children
through data and results that question
the promise of equality in learning



When Teachers See Loneliness

An experiment conducted in 46 Italian schools demonstrates that simply making social isolation visible to teachers reduces antisocial behavior in the classroom and improves inclusion. At a minimal cost

by Barbara Orlando @

In schools, beyond learning subjects, we learn to live. Yet, not all children experience school as a place of inclusion. Some kids become invisible to their peers: they are excluded from play and ignored by other groups of classmates. But if a child's loneliness suddenly became evident to teachers adults, could things change? This is exactly what Sule Alan (Cornell University), **Michela Carlana** (Bocconi University) and **Marinella Leone** (University of Pavia) observed in an experimental study titled *Inclusive Teaching: Spotting Social Isolation in the Classroom*, forthcoming in *American Economic Journal: Policy*.

A MAP TO BREAKTHROUGH INVISIBILITY

During the 2022-2023 school year, the researchers involved 46 public elementary schools in Lombardy, Piedmont and Lazio. Teachers at half the schools were given a simple tool: a map of their class's

friendship networks, constructed on the basis of the children's own feedback, accompanied by data and scientific information on the risk of social exclusion, particularly for students with immigrant backgrounds or lower socioeconomic status. "We showed teachers that their perception of social isolation among students was a gross underestimate compared to the actual data," says Michela Carlana, Director of LEAP Bocconi. "Many were surprised to see that one or more children in their class were not named as friends by any

MICHELA CARLANA
Director of LEAP,
Bocconi University

of their classmates. It wasn't meanness, it was social blindness. And we tried to address it."

LESS LONELINESS, LESS ANTISOCIAL BEHAVIOR

After six months, the researchers observed tangible effects: the probability of a child having no friends in class was reduced by 50% compared to the control group. Students in the treated classes received more nominations as "best friends," a sign of greater inclusion. But there's more. Students in the treatment group were also less likely to engage in antisocial behavior, as measured by an experimental game in which they could anonymously "sabotage" a classmate to gain a material advantage. In the treated classes, the propensity to sabotage decreased by 11%. However, there was no effect on prosocial behaviors such as cooperation or donation.

MORE EQUITY IN THE CLASSROOM, AT A MINIMAL COST

To quantify the collective effects, the research team simulated the aggregate results of the "classroom as a community": how much performance is lost due to antisocial acts? In the treated groups, the researchers observed an increase in the average payoff (i.e. simulated "economic wellbeing") and a significant reduction in internal inequality, as measured by the Gini coefficient. In other words, less sabotage equals greater wellbeing for everyone. The cost of the intervention? Just \$21 per student. "The great thing is that you don't need a large budget: all you need is data, awareness, and a few practical suggestions," explains Carlana. "Teachers responded actively: many began forming mixed-sex groups during activities and broke the dynamic whereby the most talented or popular students grouped together, leaving out the most vulnerable."

A MORE INCLUSIVE SCHOOL IS POSSIBLE

The merit of the study lies in having shown that social inclusion in the classroom is not an accidental byproduct of "doing school well," but a practice that can be taught, monitored and corrected. Making the invisible visible — like the social isolation of a child — is the first step toward building more equitable educational communities. And perhaps even toward educating better citizens ■



THE PAPER

Inclusive Teaching: Spotting Social Isolation in the Classroom, by Sule Alan, Michela Carlana, Marinella Leone



Why Girls Do Better in School?

Amid growing attention to the gender gap in academic achievement, new Bocconi research conducted on Italian longitudinal data sheds light on its real dynamics: it exists, it widens at times, but it may slowly be closing

Diane Orze @

For years, the gender gap in school grades has fueled a heated debate. While it is now widely recognized that female pupils tend to perform better than their male peers, especially in languages and the humanities, the real question is: how long does such advantage last? And is it closing?

The research paper titled *A Longitudinal Study of the Gender Gap in School Grades via Flexible Bayesian Beta Regression* by **Laura Bondi** (Human Technopole), **Beatrice Franzolini** (Institute for Data Science and Analytics, Bocconi University) and **Marco Palma** (MRC Biostatistics Unit, University of Cambridge) seeks to answer these questions.

The study is unique for two reasons: it analyzes longitudinal data, observing the academic careers of hundreds of students over time, and employs a sophisticated statistical model — a Bayesian beta regression with splines — to account for both individual differences and long-term trends.

THE RIMINI CASE: FIVE YEARS, 1,920 STUDENTS, A FEMALE ADVANTAGE

The dataset used comes from RiminiInRete, a school network in the province of Rimini that has been systematically collecting students' first-semester and final grades since 2015. The authors selected a stratified sample of 1,920 students, balanced by gender and year of birth, analyzing over 6,300 observations collected between 2014 and 2019.

The results confirm the existence of a gap: on average, female students achieve higher grades than their male peers throughout their entire school career going from

elementary school to high school. In 2014-2015, for example, on a scale of 0 to 10, the average advantage was 0.45 points; in 2018-2019, it was still significant but shrank to 0.33 points.

The gender gap not only exists, but tends to widen during transitions from elementary school to middle school, and from middle school to high school. It is interesting to note, however, that among younger cohorts, the gap appears to be narrowing slightly: a sign that something is moving.

DIFFERENCES THAT CHANGE WITH AGE AND TIME

A key aspect of the study is the observation of dynamics across school years. Female students are less affected by drops in school performance that is typical of transitions between one level of education to the next. Furthermore, despite starting at similar levels, males tend to accumulate greater variability in grades over time. Another interesting finding is that the variability in results is slightly greater among females: this may indicate greater heterogeneity, but also greater exposure to complex and sometimes inconsistent evaluation mechanisms.

TOWARD A NEW UNDERSTANDING OF THE GENDER GAP

This work — which presents preliminary results from an ongoing, broader study — lays the foundations for new questions. For example, how does the gender gap vary by subject? And how have Covid and remote learning affected the distribution of academic achievement? The team plans to extend the dataset to 2023, to include the school years affected by the pandemic. One of the next objectives is to analyze the



THE PAPER

A Longitudinal Study of the Gender Gap in School Grades via Flexible Bayesian Beta Regression, by Laura Bondi, Beatrice Franzolini and Marco Palma

impact of remote learning and the lockdown on gender dynamics. It is likely that the gaps have widened, but only an empirical analysis will be able to verify this.

A STATISTICAL MODEL FOR SCHOOLS

Beyond the specific evidence, the study also introduces an innovative methodology for educational research. The Bayesian beta regression model is particularly effective for panel data such as school data, which are limited in scale and exhibit strong individual heterogeneity. This is no small technical detail: it means providing educators, school administrators and policymakers with more refined tools to interpret educational data, identify critical areas and develop more targeted policies ■

Does Teacher Future of Disa

Research says that Italian teachers tend to lower their expectations regards students with a lower socioeconomic status, even if their abilities are the same. A Bocconi study reveals that this bias varies systematically depending on a teacher's basic personality

By Andrea Celauro @

Teachers, on average, rate students from a disadvantaged socioeconomic background as less likely to succeed academically, even when they have the same abilities, skills and motivation as their more affluent peers. This isn't necessarily surprising, given that — all things being equal — greater availability of economic and cultural resources can translate into better academic outcomes. What is surprising, however, is that teachers' expectations on student performance vary systematically. This is what emerges from the paper *Teacher personality and the perceived socioeconomic gap in student outcomes* by **Pamela Giustinelli** (Bocconi) together with **Giorgio Brunello**, **Clementina Crocè** and **Lorenzo Rocco** (University of Padua).

The research, based on a pilot survey conducted in 2023 among 235 middle school teachers in the Veneto region, shows that teachers who are more extroverted and open to experience tend to be more pessimistic about the chances of students from low-income backgrounds to succeed in school. Conversely, teachers who are more conscientious and agreeable appear to have a stronger belief in potential of



Personality Limit the Educational Advantages of Disadvantaged Students?

these students, but only in technical and professional careers.

“We have begun to fill a gap in economic literature on education to consider the influence of teacher personality on the process,” explains Pamela Giustinelli, co-author of the study and Assistant Professor at the Bocconi Department of Economics. “Our findings not only suggest that teachers’ mindsets — critical in the orientation process — are not neutral with respect to a student’s social background, but that the orientation also reflects subjective traits of the teachers themselves.” The study is based on a vignette experiment, which consisted of showing hypothetical but realistic profiles of third-year middle schoolers, systematically varying their gender, personality, preferences, academic performance, immigration background and, above all, their family’s socioeconomic status. Each teacher had to estimate a student’s likelihood of successfully completing one of the four kinds of high school programs available in Italy (scientific high school, classical high school, technical high school and vocational high school). At the same time, the personality traits of the teaching faculty were measured according to the Big Five model: extroversion, openness to experience, conscientiousness, agreeableness and neuroticism. The results show that, on average, teachers give a 20.7% lower probability of successfully completing an academic program for students from disadvantaged backgrounds, compared to their peers from middle-class to upper-middle-class households. For technical-vocational programs, the gap is smaller, but significant (-6.5%). However, it is by analyzing the interactions between teacher personality and socioeconomic disadvantage that the most interesting results emerge. When a teacher has a more extroverted and experience-

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at Department
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oriented profile, the gap in expectations toward disadvantaged students increases to 46.8% for licei, and 8.1% for technical/vocational programs. Conversely, more conscientious and friendly teachers tend to evaluate the chances of disadvantaged students in technical-vocational programs more positively, exceeding the average estimate by 17.2%.

Why does this happen? The authors hypothesize that more open teachers, attracted by cultural and abstract stimuli, may perceive disadvantaged students as less prepared to face the theory-heavy challenges of scientific and classical high schools, due to less exposure to extracurricular stimuli. Similarly, extroverted teachers, who value social relationships, may believe that students without strong family networks struggle to integrate into elite school environments.

“Future research will need to test these hypotheses on a larger scale. In any case, the results of this initial study raise the possibility of a concrete risk: that students with similar characteristics end up on different educational paths simply because they are affected by the biases of teachers having different personalities,” Giustinelli emphasizes. “This could have implications for the equity of the school system and for social mobility prospects.”

The research study cannot say whether teachers’ expectations are correct or whether they contribute to achieving what they anticipate, as in a self-fulfilling prophecy. But it shows that these evaluations systematically depend on the teacher’s personality. This finding — all other variables being equal — suggests that they cannot simply be considered objective assessments.

For this reason, the authors propose adopting possible countermeasures. One is limiting the weight of subjective opinions in the orientation process, perhaps through standardized tools or the use of artificial intelligence, or balancing teachers’ basic personalities in school councils. Another idea is to assess the personality traits of future teachers during their university studies or upon entering the profession, to ensure greater awareness of their role in shaping the destinies of students ■



THE PAPER

Teacher personality and the perceived socioeconomic gap in student outcomes, by Giorgio Brunello, Clementina Crocè, Pamela Giustinelli, Lorenzo Rocco

The Best Tutor Is an Algo

A scientific experiment compares teachers and AI in the classroom: GPT-4 wins. But what does this really mean?

by Barbara Orlando @

What makes a tutor effective? The ability to engage, to recognize when a student is struggling, to guide them toward a solution without simply handing it over. In a word: empathy. Or more precisely, pedagogical empathy. A quality we've long considered uniquely human — and one that now risks being matched, or even surpassed, by an artificial tutor. This isn't science fiction: it's the concrete result of a European study that challenges some of our most deeply held assumptions about education.

In the working paper *Educators' Perceptions of Large Language Models as Tutors: Comparing Human and AI Tutors in a Blind Text-Only Setting*, six authors — **Sankalan Pal Chowdhury, Terry Jingchen Zhang and Mrinmaya Sachan** (ETH Zurich), **Dirk Hovy** and **Donya Rooein** (Bocconi University), **Tanja Käser** (École Polytechnique Fédérale de Lausanne) — designed an experiment to compare the perceived effectiveness of human tutors and those based on large language models (LLMs) in a strictly blind setting. No names, no interfaces, just plain text. “We wanted to understand how LLM tutors are perceived — not in terms of learning outcomes, but in terms of the latent traits that make educational interactions effective,” explains Dirk Hovy, Associate Professor of Natural Language Processing and Computational Social Science and Dean for Digital Transformation and Artificial Intelligence at Bocconi University. “It's a kind of pedagogical Turing Test in reverse: we're not asking who the human is, we're asking who's the better tutor.”

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TEACHERS VS AI, JUDGED BY EDUCATORS

The experiment involved 210 pairs of tutor-student dialogues, all based on elementary-level math word problems. On one side were conversations generated by human teachers interacting with a simulated student — an LLM designed to make typical mistakes. On the other, responses generated by MWPTutor, a GPT-4-based system with built-in guardrails and structure to ensure correctness and consistent student guidance.

The dialogues were evaluated by 35 annotators, all with teaching experience. They were asked to judge — without knowing whether a response was human- or AI-generated — which tutor was better according to four criteria: engagement, empathy, scaffolding (i.e. the ability to guide the student toward the solution without providing it directly) and conciseness. The result was clear. MWPTutor outperformed the human tutor on every metric. The most striking gap was in empathy,

rithm



THE PAPER

Educators' Perceptions of Large Language Models as Tutors: Comparing Human and AI Tutors in a Blind Text-only Setting
by S. Pal Chowdhury, T. Jingchen Zhang, D. Rooein, D. Hovy, T. Käser, M. Sachan

where 80% of evaluators preferred the AI tutor. Scaffolding and conciseness followed, both with statistically significant advantages for the LLM. Only in engagement was the result more mixed, but still in favor of humans.

THE (APPARENT) POWER OF ARTIFICIAL EMPATHY

The idea that an algorithm could be seen as more empathetic than a human teacher is surprising, to say the least. “The most counterintuitive result is that the AI was perceived as more empathetic,” says Hovy. “Of course, it doesn’t actually feel empathy — it simulates it. But it does so well enough to convince those evaluating it.” Conciseness was another non-trivial finding. Although the LLM’s dialogues were often longer, they were perceived as more focused and goal-oriented. The AI conveyed a clearer sense of progress, while the human-generated dialogues tended to appear fragmented or meandering. Add to this the matter of form: human texts included typos, grammatical slips and stylistic inconsistencies, while the AI was polished, fluid and coherent. That difference — even unconsciously — may have influenced perceptions of professionalism and authority.

TIRED TEACHERS, TIRELESS AI

But there’s a deeper explanation. Showing empathy, engaging a student and adapting to their level of understanding is not just a matter of pedagogy — it

demands mental effort and emotional availability. “Empathy is hard work,” Hovy adds. “A human teacher can be tired, overwhelmed or frustrated. AI can’t. It can be endlessly patient, cheerful, and empathetic, 24/7, without ever losing its cool.” There’s also contextual bias to consider. Human tutors in the study knew they were interacting with a simulated student. That awareness may have dampened their motivation or attentiveness. The AI, of course, doesn’t care — or even know the difference.

CAN A MACHINE TEACH?

The answer is: to some extent, yes. The study shows that a well-designed LLM can successfully perform certain types of text-based tutoring, especially tasks that are repetitive and rule-based. This doesn’t mean AI is ready to replace human teachers — but it can become a powerful ally. “Our hope is that teachers will use tools like MWPTutor to offload part of the workload, not to be replaced,” Hovy concludes. “AI is good at simulating empathy, but it will never truly understand a student’s human and social context. And that, fortunately, is still our job.” For educators, the message is clear: artificial intelligence won’t make teaching obsolete. Rather, it can free up time and energy to focus on what machines can’t do. For those designing educational systems, the point is equally sharp: if we want AI to serve education, we must build it not only to deliver correct answers, but to speak — and respond — like a good teacher ■

AI Enters the Classroom and Challenges the Entire System

At Yellow Tech, an education company, founder Antonio Pisante is bringing advances in algorithmic technology to schools and businesses. "For teachers, AI is a powerful tool for improving productivity and the quality of teaching. And for students, a course of ours is an opportunity to reflect on the critical use of tools they already know"

by Pietro Masotti @

As often happens in entrepreneurial genealogy, successful companies are born out of countering earlier negative experiences of entrepreneurs. This also happened to **Antonio Pisante**, Bocconi Alumnus, founder of Yellow Tech, a technology training company specializing in AI and the education sector. "I never had a good relationship with schooling, at least until I joined Bocconi," recalls Pisante, who graduated from the University in 2017. "Perhaps that's why, from the very start of my career, I've been so passionate about creating something useful to improve the school environment. Initially, I envisioned an AI-based chatbot tutor for students. It was an attempt — I believe the first ever — to democratize personalized learning with artificial intelligence, a potentially effective method to compete with the private tutoring model which had historically been elitist and unscalable. The idea was fascinating, but from a business perspective, it proved unsustainable: who would have the interest and the money to pay for such a tool?"

→ So you changed tack?

Exactly. We realized that it wasn't enough to provide the technology; it was essential to teach people how to use it correctly. Hence the shift towards training, which we pursue along two lines: raising awareness on the limitations of AI, for example, the "hallucinations" that large language models still provide in their answers, and developing practical skills to exploit their potential, from data analysis to research to the creation of new content. We started with companies, where there is a greater readiness for adoption for competitiveness and budget reasons, and then entered schools through public tenders, particularly those now funded by the National Recovery and Resilience Plan.

→ With Yellow Tech, you offer tailored courses for

teachers, students and administrative staff. What are the specific benefits for each segment of the school population?

Our approach is different for each group. For teachers and administrative staff, the principle we espouse is the same: AI can help them perform their normal work faster, more efficiently and sometimes better. For teachers, we do an even more specific job, building AI courses after analyzing their actual daily activities: preparing teaching materials, grading assignments, communicating with families. We demonstrate how AI can automate or speed up these processes. The goal is to transform four hours of afternoon work into one, and dedicate time saved to the quality of teaching. And the quality actually increases: with AI, you can create personalized and interactive exercises, moving beyond the old method of copying and pasting from the internet. Similarly, we spent several days in a school to understand the various roles of all non-teaching staff. Much of their work involves analyzing and managing documents, writing emails, using Excel and doing presentations, and our courses show how AI can greatly streamline all these routine tasks.

→ Students, however, already know how to use these tools...

Yes, while only 20% of teachers in classes have already developed experience with ChatGPT, the percentage rises to 80-90% among students. Students already use AI in many activities, but often inappropriately, unaware of its inner mechanisms and limitations. Our work with them isn't about further encouraging the use of AI, but about increasing awareness of its potential and limits: explaining what hallucinations are, why a model can be wrong, what "AI ethics" means and how these software programs really work. Naturally, we also conduct hands-on activities and group work to teach how to use AI for research or presentations.

→ **What are the factors that determine the success of an AI training course in the school context?**

The quality of a trainer is the most important factor. They must have a thorough and accurate understanding of AI and, at the same time, have the teaching skills needed to inspire participants. Another factor is the age of the teachers. Finally, the right cultural sensitivity of school principals and a good organizational structure of the school play a crucial role. For example, we've noticed a significant difference between North and South of Italy: in the North, many more schools have proven to be equipped to seize the opportunities offered by public funding, often thanks to the presence of an active "digital animator" pushing innovation.

→ **In the long term, do you see any risk that AI could "switch off" the brain of young people and even replace teachers?**

There's a chance that future generations will lose trust in teachers, seeing an omniscient chatbot as a more reliable source of knowledge. On the other hand, however, frontal classroom teaching has remained nearly unchanged since Classical Greece, while everything around us has changed immensely; perhaps the time has come to rethink its value, always keeping the human mind at the center of pedagogy. However the habit of completely delegating reasoning to AI is indeed risky: in the long run, it can impoverish human intellectual capacity, just as the overuse of Google and search engines has ultimately unaccustomed us to memorizing. This is why it's crucial to work on user awareness and perhaps even establish an age limit for the use of certain AI tools, to allow critical thinking to fully develop. We ourselves, for student courses, follow the policies of major providers like OpenAI and our courses are only addressed to individuals over 14 years of age.

→ **While there's a push for the integration of AI in classrooms, this year schools have banned smartphones in class. Isn't that a contradiction?**

It may seem paradoxical, but I personally agree with this development. Precisely because these tools are so powerful and pervasive in young people's lives, it makes sense to create "disconnected" moments, like classroom time, to let their brains work unaided by digital devices. What's important is not to demonize technology: students must be able to use these tools at home, because they are now part of the world. AI can be studied at school even without using it there, and then be applied at home. The goal is never to ban it, but to always educate about its conscious use ■



ANTONIO PISANTE
Bocconi Alumnus,
Founder Yellow Tech



Private Spending Creates Poverty

Even today, almost one in ten families faces “catastrophic” expenses for healthcare. If policies are not adjusted, by 2060 the economic burden of healthcare may overwhelm a large number of Italians

by Barbara Orlando @



The Italian National Health Service was created to treat everyone, without distinction. But nowadays that universal promise is faltering: heavy prescription charges, drugs paid for by families, dental care largely excluded, and waiting lists that push people towards the private sector. The result? Already in 2022, 8.6% of families faced “catastrophic” healthcare expenses and 3.7% fell or returned below the poverty line after paying for medical care.

These are the figures from the World Health Organization report *Can people afford to pay for health care?* New evidence on financial protection in Italy, authored by **Giovanni Fattore**, full professor in the Department of Social and Political Sciences at Bocconi, and **Luigi M. Preti**, researcher at CERGIS at the same university. But the real news is that these figures hint to the future: without a significant increase in public spending, the proportion of families in financial difficulty due to healthcare costs will continue to grow until 2060.

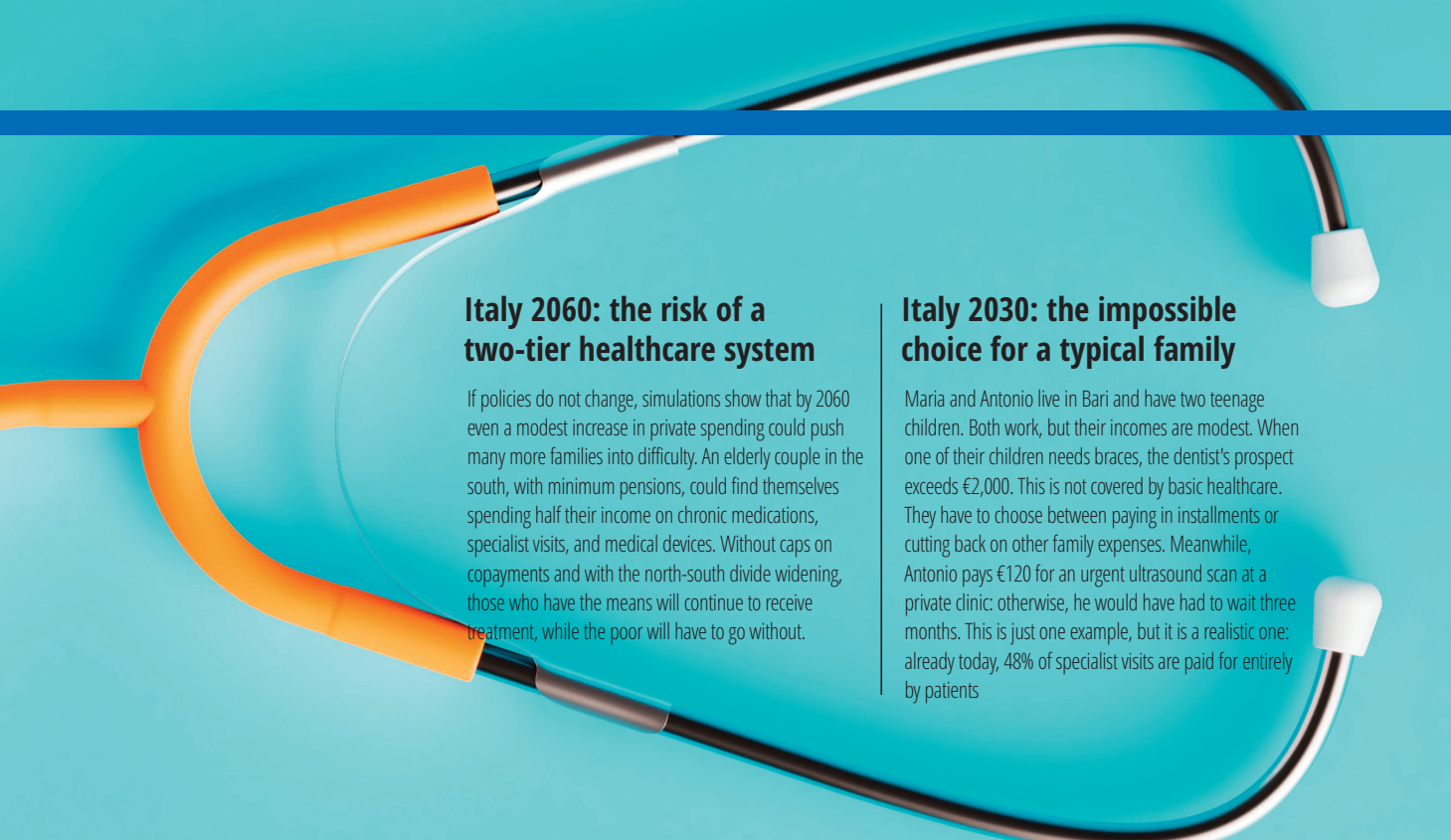
“In the coming decades, without targeted investments, the right to health risks becoming a luxury,” warns Fattore. “Aging, commercial pressures toward unnecessary treatments, and stagnant public spending will inevitably push more families into health poverty.”

WHERE DOES THE MONEY GO?

In 2022, 39% of private spending went to outpatient drugs, 23% to outpatient services, 22% to dentists, and 14% to medical devices. But the numbers change depending on income: the poorest spend mainly on drugs (54%), the richest on dentists (29%). For the most vulnerable families, catastrophic expenditure is driven by medicines and outpatient services; for the wealthiest, it is driven by dental care. The most disturbing thing about medicines is that one



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Italy 2060: the risk of a two-tier healthcare system

If policies do not change, simulations show that by 2060 even a modest increase in private spending could push many more families into difficulty. An elderly couple in the south, with minimum pensions, could find themselves spending half their income on chronic medications, specialist visits, and medical devices. Without caps on copayments and with the north-south divide widening, those who have the means will continue to receive treatment, while the poor will have to go without.

Italy 2030: the impossible choice for a typical family

Maria and Antonio live in Bari and have two teenage children. Both work, but their incomes are modest. When one of their children needs braces, the dentist's prospect exceeds €2,000. This is not covered by basic healthcare. They have to choose between paying in installments or cutting back on other family expenses. Meanwhile, Antonio pays €120 for an urgent ultrasound scan at a private clinic; otherwise, he would have had to wait three months. This is just one example, but it is a realistic one: already today, 48% of specialist visits are paid for entirely by patients

billion is spent on branded medicines when cheaper equivalents (generic) are available.

The concentration of spending is clear: in 2022, catastrophic spending hit 27% of the poorest households, 18% of households headed by economically inactive people, 13% of elderly people living alone, and 11% of households with two or more children.

And it will get worse: since 2025, copayments have increased by an average of 5.8%, with a stronger impact in the South. "Copayments do not protect those who have less," explains Preti. "Without income-related caps and with strong regional disparities, we risk splitting the country in two as far as health care is concerned: one part where access is available, and one where it is denied."

NORTH AND SOUTH: A WIDENING GAP

Fifty percent of families affected by catastrophic expenses live in the South, even though they account for less than 40% of the population. Here, the probability of becoming impoverished due to medical treatment is more than double that of the North. And healthcare mobility confirms this: in 2022, 72% of hospital patients "fleeing" to other regions involved patients from the South. Europe-wide data paints an even grimmer picture: in 2022, Italy had a level of catastrophic healthcare expenditure above the EU average and higher than all Western European countries except Portugal. In 2023, out-of-pocket payments

accounted for 23% of current healthcare expenditure, compared to 17% for the EU14 average and 19% for the EU27. Public health expenditure in Italy (6.7% of GDP in 2022) remains lower than in almost all Western European countries, and in 2024 the share of the population at risk of poverty or social exclusion was 23%, above the EU average (21%).

THE UNMET NEED

Economic hardship is compounded by access issues. Unmet need – i.e., the need for care that is not met – shows a significant income gap: lack of access is greater among the poor and reaches its highest levels in dental care, more than for health visits or prescription drugs.

WHO RECOMMENDATIONS

The report calls for immediate action:

- introduce a nationwide cap on co-payments proportional to income;
- extend exemptions to all working-age people on low incomes;
- reduce avoidable co-payments through greater use of generic drugs (currently only 9% of the market value in Italy, compared to the OECD average of 27%);
- expand public coverage for dental care and medical devices;
- cover travel costs for poorer patients who need treatment outside their home region;
- extend the right to National Health Service benefits to undocumented adult migrants.

The report also criticizes the 19% tax deduction on healthcare expenses over €129 per year, because it ends up favoring higher incomes ■



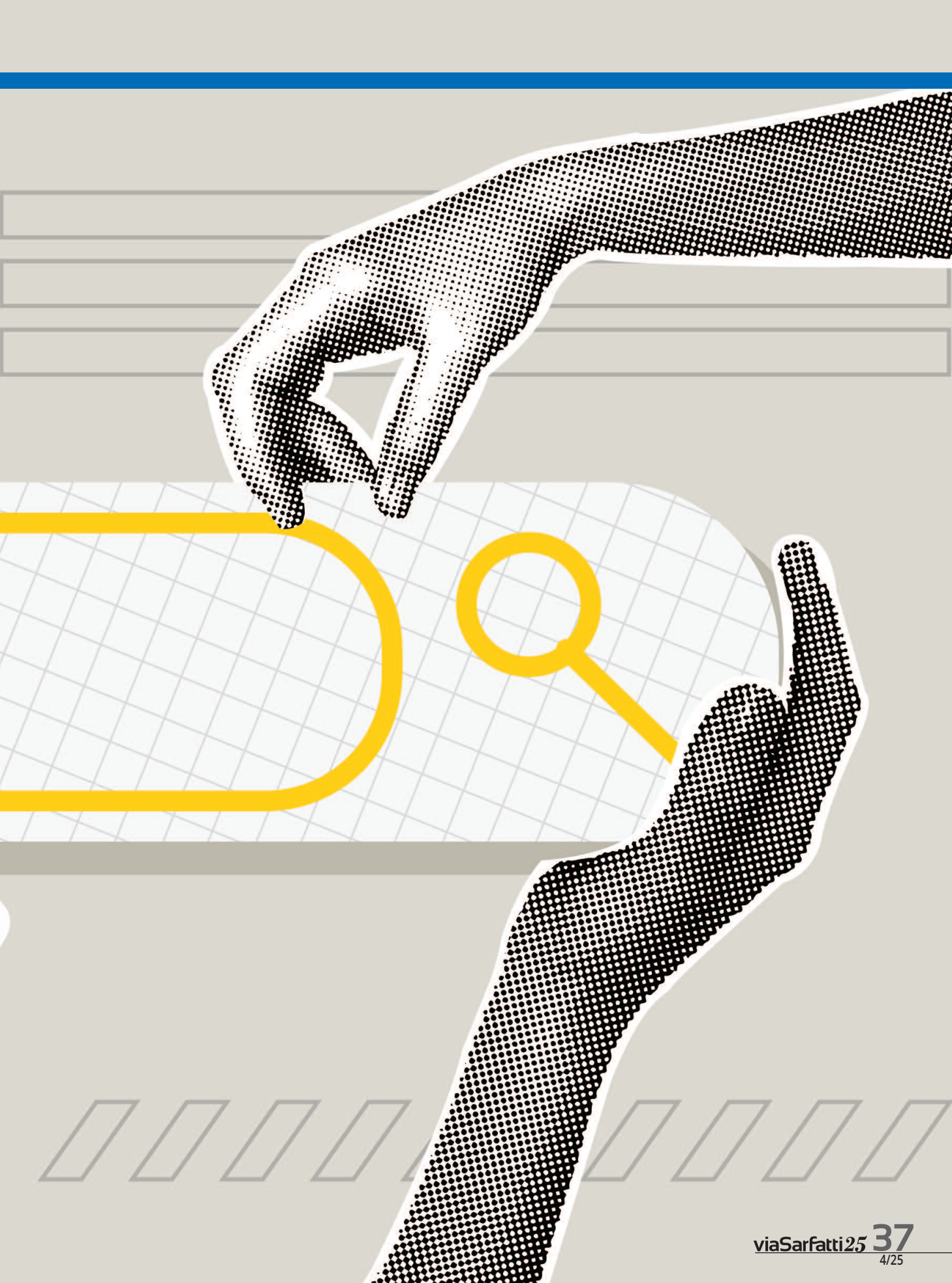
THE PAPER

Can people afford to pay for health care? New evidence on financial protection in Italy, by Giovanni Fattore and Luigi Preti

From the equations that describe turbulence to the mechanisms of finance, from labor market policies to the institutions of the state: the six new research projects by Bocconi scholars funded in 2025 by the European Research Council explore the principles that govern economic, social, and mathematical complexity. With these additions, Bocconi now hosts 36 active ERC projects and a total of 72 awarded to date—a testament to the University's ability to generate knowledge that interprets the present and helps shape the future



Where Knowledge Is Born to Change the Rules



Beyond Chaos

From pendulums to the motion of planets, mathematical models can describe chaotic phenomena. But turbulence has remained an enigma, challenging scientists and physicists for centuries. MIND attempts to address this age-old problem with new tools

by Elia Brué @

There are natural phenomena that for centuries have defied mathematicians' ability to confine them into precise rules. The motion of a pendulum, the gravitational ballet of two planets, even chaos as described by Edward Lorenz: all have found, in different ways, a theoretical framework to describe them. But turbulence has not. It is an enigma that endures, capable of shaking up consolidated models and challenging even equations that we consider "fundamental." It is no coincidence that Richard Feynman called it "the most important unsolved problem of classical physics." It is this unstable and fascinating territory that is explored by MIND – Mathematical Insights into Dynamics of Incompressible Turbulence, a project funded by the European Research Council, to study mathematical models of turbulence and understand its deeper mechanisms.

There are "predictable" systems, called integrable systems, in which the dynamics can be resolved with mathematical precision and expressed through formulas. In these cases, knowing the initial state, even with a small error, is sufficient to reconstruct a faithful approximation of the entire evolution process. Two classic examples: the motion of an ideal pendulum, perfectly described with trigonometry; and the dynamics of two celestial bodies, such as the Earth and the Sun, already understood by Kepler and Newton.

At the other extreme, we find chaos, studied in depth in recent decades and now equipped with a solid mathematical framework. In chaotic systems, even if they are deterministic, evolution appears increasingly complex as time passes. A small change in the initial conditions is amplified, typically with exponential growth. As Lorenz put it: "When the present determines the future, but the approximate present does not approximately determine the future." One of the simplest models of this type is the logistic model, which describes population growth.

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Turbulence is not chaos: it goes beyond that. In the models that describe it, the mathematical structure tends to degenerate instantly. Equations can be poorly posed, solutions non-unique and irregular. Amplification of the initial error can become infinite in an instant. Yet, in this apparent absence of rules, universal laws emerge, as observed in experiments and simulations which still elude rigorous understanding. The best-known examples come from fluid dynamics, the testing ground of contemporary mathematics. In the 18th century, Leonhard Euler deduced the equations for the motion of an ideal, frictionless fluid. In the 19th century, Claude-Louis Navier and George Gabriel Stokes wrote differential equations for viscous fluids, which today bear their names and are fundamental to meteorology, engineering and environmental science. Yet, centuries later, their theoretical understanding remains limited. For the Navier–Stokes equations in three dimensions, we don't even know whether regular solutions always exist: it is one of the six famous Millennium Prize Problems listed by the Clay Mathematics Institute, awarding its solver with a prize of one million dollars. So far, of the six problems only the Poincaré conjecture has found a complete solution, thanks to Grigori Perelman.

Based on these same equations, in 1941 Andrei Kolmogorov proposed the phenomenological theory K41, which describes the transfer of energy from large to small scales and certain universal statistical laws. Phenomena such as anomalous dissipation and the zeroth law of turbulence are the founding pillars. More than 80 years later, these predictions remain without rigorous mathematical proof. In 1949, Lars Onsager instead intuited that, under certain regimes, the solutions to Euler's equations could violate the principle of the conservation of energy: a visionary prediction, confirmed only recently



thanks to the convex integration technique introduced by Camillo De Lellis and László Székelyhidi. It is astonishing that, faced with such a wealth of phenomena and insights, there is still no mathematics capable of comprising them into a general theory. MIND analyzes these scenarios by studying fundamental mathematical models. Turbulence forces us to consider regimes in which standard techniques are inapplicable and classical results do not hold. To address them, it is necessary to develop new tools, with potential

implications beyond the specific problem studied. At the same time, the goal is to better understand the Euler's and Navier–Stokes equations, which centuries after their formulation continue to present unresolved questions. Understanding turbulence is not just about solving a mathematical puzzle, but paving the way for concrete progress in fields that affect everyone's lives: from more reliable meteorology to better energy and aircraft design, to the protection of the environment and the management of flows in future cities ■

Understanding the Causes of Financial Fragility

Banking crises, recurring throughout economic history, reveal structural vulnerabilities linked to deregulation, bank runs and supervision. The INFINITY project aims to develop new theoretical and empirical tools to understand these dynamics, turning knowledge into more effective policies and building a more stable and resilient financial system

by Elena Carletti @

Banking crises have been regular features of modern economic history. From the Great Depression to the collapse of Silicon Valley Bank in 2023, via the global financial crisis of 2007-2008, they are turning points leaving deep scars on society, businesses and institutions. Two recurring elements are present in each crisis: sudden and massive withdrawals by depositors, also known as bank runs, and the relaxation of prudential rules and supervisory procedures in the preceding phase.

This observation led to the creation of INFINITY – The Origins of Financial Fragility, a research program of which I am the principal investigator, which is about to be launched thanks to the support of the European Research Council through an ERC Advanced Grant.

The goal is ambitious: to develop new theoretical and empirical tools in order to achieve an in-depth understanding of the dynamics of banking fragility that helps develop more effective public policies.

The project is divided into three separate but closely interlinked research areas. The first is theoretical in nature. Traditional models of bank runs have accurately described the role of deposits as an insurance tool for savers, but today they look incomplete. Digitalization, the growth of corporate deposits, and greater banking concentration have transformed the reference

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framework. My goal is to develop a new theoretical system that incorporates these changes and allows for a rigorous analysis of how bank capital and monetary policy influence the probability and nature of bank runs. In this way, we aim to clarify the hitherto little-explored link between financial fragility, monetary policy implementation and central bank credibility.

The second area is empirical and concerns the political dimension of banking regulation. Preliminary studies show that banks that benefited most from the deregulation introduced by the Economic Growth, Regulatory Relief, and Consumer Protection Act of 2018 had invested heavily in lobbying in previous years. By setting up an original dataset on lobbying and electoral contributions, I intend to systematically measure the ability of banks to influence the legislative process, seeking to understand whether this occurs through information channels or direct exchanges of favors. This line of research will provide new evidence on a crucial aspect: the relationship between private interests and systemic stability.

The third area concerns supervision. Too often, regulation and supervision are considered synonymous, but they actually perform different functions. Regulation establishes general rules, while supervision interprets and enforces them.

Using a unique Federal Reserve dataset, which

includes information on individual supervisors, it will be possible to study how each supervisor’s “style” — whether stricter or more lenient — affects the behavior of banks. This is an important step forward in understanding how much stability depends not only on written rules, but also on the human and professional capital of supervisory authorities.

INFINITY stems from the need to update and enrich existing theories, linking disciplines that have often proceeded in parallel: the theory of bank runs, the study of bank capital, regulatory policy and the empirical analysis of supervision. The hope is to build a bridge between theoretical reflection and empirical analysis, between academic research and policy, producing results that are both scientifically and socially relevant. Banking crises can never be completely eradicated. But understanding their causes, mechanisms, and vulnerabilities is the first step toward reducing their frequency and severity. With INFINITY, we want to contribute to this goal: transforming fragility into knowledge, and knowledge into tools for a more stable and resilient financial system.

MIND analyzes these scenarios by studying fundamental mathematical models. Turbulence forces us to consider regimes in which standard techniques are inapplicable and classical results do not hold. To address them, it is necessary to develop new tools, with potential implications beyond the specific problem studied. At the same time, the goal is to better understand the Euler’s and Navier–Stokes equations, which centuries after their formulation continue to present unresolved questions. Understanding turbulence is not just about solving a mathematical puzzle, but paving the way for concrete progress in fields that affect everyone’s lives: from more reliable meteorology to better energy and aircraft design, to the protection of the environment and the management of flows in future cities ■

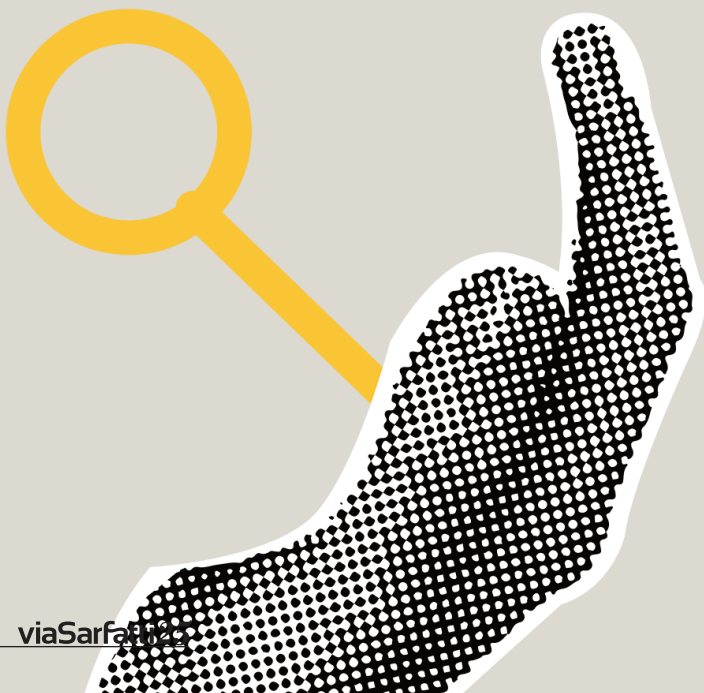
Balancing P

Do companies’ ethical choices really have a positive impact on society, or are they just for show? From the study of historical cases to today’s practices, the BALANCE project explores the boundaries between genuine social responsibility and greenwashing

by Michele Fioretti @

Over the past two decades, the world has witnessed an explosion of corporate sustainability commitments. In 2000, no country had laws on corporate sustainability; today, more than 70 do. From climate action plans to social responsibility reports, companies increasingly pledge to “do well by doing good.” Yet behind the glossy brochures and ambitious targets, one question remains: do firms’ ethical choices actually benefit society, or are they simply strategies to attract customers and investors? This question lies at the heart of BALANCE, a research project I lead that was recently awarded a European Research Council (ERC) Starting Grant. While most of the literature limits itself to measuring what firms do, BALANCE asks something deeper: how do firms actually impact society, and how does society in turn shape firms? When companies internalize the concerns of stakeholders, their objectives extend beyond pure profit maximization. In these settings, the crucial task is to uncover the feedback loop between firms and society, tracing when this interaction produces benefits and when it generates distortions.

The novelty of the first strand of the project is to move beyond simply cataloguing prosocial actions and instead to study their long-term consequences for the people and places affected. This requires addressing two challenges: distinguishing genuine social responsibility from greenwashing, and identifying the key stakeholders influenced by firms’ prosocial behavior. BALANCE approaches this by examining a unique historical episode: Pope Leo XIII’s 1891 encyclical *Rerum Novarum*, which encouraged Catholics to create cooperative banks. These institutions provided affordable credit to local entrepreneurs and, according to preliminary evidence, played a pivotal role in the



Profits and Community

emergence of Italy's industrial clusters. This suggests that firms' prosocial actions can have profound and lasting effects, shaping local economic growth over generations. A further contribution of the project will be to digitize and make publicly available tens of thousands of historical balance sheets of Italian limited corporations, creating a valuable resource for future research.

The second part of the project turns to the present, asking whether competition fosters or erodes corporate ethics. Ethical banks often serve riskier clients excluded from mainstream finance, yet they attract unusually loyal depositors. BALANCE investigates whether these banks thrive simply because their image allows them to attract depositors who are less sensitive to interest rates — making ethics little more than greenwashing — or because they actively contribute by accepting lower markups to support certain borrowers. The distinction is highly relevant for regulators currently debating whether ethical banks should face lighter liquidity requirements, with direct implications for access to credit and the risk of financial desertification in underserved areas.

A further part of the project examines how dispersed stakeholders can coordinate their impact. Universities, for instance, establish student unions that allow individuals to organize across topics and make their voices heard. This coordination problem is particularly acute for shareholders: although small investors collectively control vast portions of financial markets, they often remain passive, uncertain whether others share their concerns. BALANCE addresses this issue by studying the case of the Dutch NGO Follow This, which mobilized Shell's green minority shareholders. The example shows how grassroots coalitions can influence even the largest corporations, and how, once shareholders become aware of the presence of likeminded peers, they extend their demands across the firms in their portfolios, spreading change from one company to many.

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The policy implications are significant: one possible innovation would be to enable shareholders to coordinate their votes by preference groups — such as environmental issues or labor standards — so that minority voices can shape corporate strategies more effectively.

The final part of the project focuses on global supply chains, where sustainability certifications have become a central tool to reassure consumers. In Uruguay's pulp and paper industry, plantations of fast-growing trees meet certification standards while creating so-called "green deserts," damaging biodiversity and local farming. By tracing how firms respond to certification rules, BALANCE shows how transparency policies can produce unintended consequences, a question of particular urgency as the European Union reconsiders its own supply chain regulations.

WHY THIS MATTERS NOW

These questions resonate strongly with current debates. In Brussels, policymakers are weighing reforms to sustainability reporting. In financial centers, central banks and regulators are wrestling with how to treat banks that claim a social mission. And across global markets, shareholder activism continues to test the balance of power between finance and environmental and social responsibility. Against this backdrop, BALANCE provides much-needed evidence on how firms' strategies spill over into society — sometimes counterintuitively. Its findings are expected to inform not only academic research but also the choices of policymakers, investors and citizens seeking to distinguish between genuine responsibility and greenwashing.

TOWARD A NEW CORPORATE CONTRACT

Firms are not just engines of profit; they are social actors shaping communities, markets and ecosystems. Their interests and society's goals do not always coincide. By identifying the frictions — whether competition, information gaps or flawed certification systems — that distort outcomes, BALANCE seeks to design better policies to bring corporate strategies closer to the public good.

Progress on sustainability is often slow, particularly in the social and governance domains, because these values are difficult to measure. By shifting attention from measurement to mechanisms, BALANCE aims to reimagine the relationship between firms and society — not as adversaries, but as partners in shaping a more sustainable future ■

Lifting Up the Working Poor

In-work poverty remains a challenge in Europe, particularly in Southern and Eastern countries, and has worsened with the pandemic and the cost-of-living crisis. Policy responses range from minimum wage regulations to redistributive tools such as taxes and transfers, with differing national approaches. The LIFT-UP project aims to rethink these instruments to make them more effective, sustainable and socially acceptable

by Giulia Giupponi @

Despite robust labor markets and social protection systems, in-work poverty is a persistent challenge in Europe. According to Eurostat data, 8.2% of employed individuals in the European Union are at risk of poverty, with significant variation across countries. Southern and Eastern European nations like Italy (10.2%), Greece (10.7%), Spain (11.2%) and Bulgaria (11.8%) experience particularly high rates of in-work poverty, while Central European and Nordic countries like Germany (6.5%) and Denmark (6.2%) feature lower levels. The pandemic and subsequent cost-of-living crisis have exacerbated these trends, with inflation and stagnant wages disproportionately impacting low-wage workers. Young workers, part-time employees and those in precarious employment arrangements are especially vulnerable.

The pressing nature of these developments is also reflected in the European Commission's Pillar of Social Rights, a set of guiding principles to build a fair and inclusive Europe, including through guaranteeing that all workers receive fair and adequate wages. Policy support for workers on low incomes has traditionally come from minimum wages and taxes and transfers.

Traditional economic theory has long suggested that redistribution through taxes and transfers should be the primary mechanism for supporting low-income workers. Central to this principle is the notion that market prices — including wages — are indicators of scarcity; suppressing their role for distributive reasons would create inefficient distortions.

According to this view, minimum wages distort the price of labor and, if set too high, generate involuntary unemployment, especially among the lowest paid. Support for the working poor should instead come from the tax and transfer system, for instance via tax credits such as the Earned Income Tax Credit (EITC) in the US, or the Prime

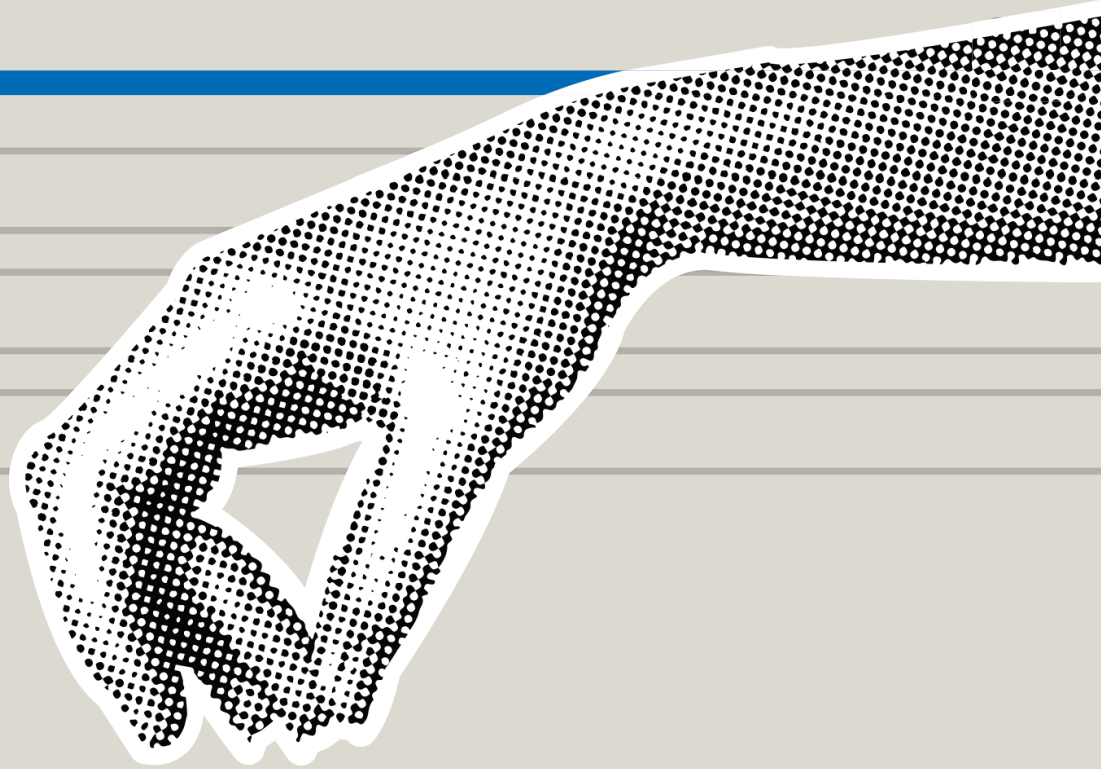
GIULIA GIUPPONI
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d'Activité in France. With such programs, market incomes are topped up by the government rather than being constrained by minimum wage regulations. Reality, though, is more complex. Most governments rely on a mix of pay regulations and tax credits to support the working poor. Over the past decade or so, minimum wages have gained unprecedented popularity in the policy sphere. Several countries around the world have introduced new statutory minimums (e.g. Hong Kong in 2011, Germany in 2015 and Cyprus in 2023) and others have adopted ambitious increases (e.g. the United Kingdom since 2016). In the United States, more than half of states have a minimum wage above the federal level and more than 40 cities have instituted minima above the state or federal ones. In 2022, the European Union adopted a directive to improve the adequacy of minimum wages, promote collective bargaining in wage setting and increase workers' access to minimum wage protection in all European Union member states. The demand for minimum wage policy seems justified with appeals to social preferences, namely ideals of fairness and self-determination.

Selecting the most adequate policy mix to tackle income inequalities requires taking a more realistic view of the existing policy mix and developing a fuller understanding of how predistributive and redistributive policies — such as minimum wages and taxes and transfers — interact in shaping the wage and employment outcomes of workers on low incomes. It also requires careful consideration of the political viability and social acceptability of those policy tools.

The project LIFT-UP “Lifting Up the Working Poor: Predistribution and Redistribution at the Low End of the Wage Spectrum” is a research laboratory I lead at Bocconi University, funded by the European Research Council. Its ambition is to rethink how to best design core in-work antipoverty tools, providing guidance for concrete reform action that is not only economically sound but also socially and politically sustainable ■





The Shape of Change

Mathematical structures for understanding the evolution of complex systems: this is what the OPTiMiSE project studies and does research about

by Giuseppe Savaré @

Imagine a ball sliding along a curved surface. It descends pulled by gravity, trying to reach the lowest point by following the steepest slope, guided by the geometry of the surface. A simple example that suggests a general idea: the search for equilibrium through change, driven by a principle of efficiency or economy. Let's broaden our perspective: from the small movements of a ball to the dynamics of the atmosphere, to capital flows, transformations in materials or biological systems, and even the paths of search algorithms in data or neural networks. Even in these cases, evolution follows non-arbitrary laws and dynamics, which are often difficult to capture. To achieve a deeper understanding — also useful for simulations or forecasting — we need a mathematical language capable of describing and analyzing these transformations precisely. With the OPTiMiSE project, funded by the European Research Council (ERC), we propose and study mathematical models in order to understand the transformations of complex systems and how they evolve, adapt or undergo deep transitions.

The project addresses evolutionary problems: contexts in

which a state, form, or structure changes over time, continuously or discontinuously, sometimes irreversibly. Despite the diversity of the phenomena under consideration, mathematics selects and extracts only the essential aspects, isolating what truly matters: the properties of energy, the geometry of space and the variational principles that guide evolution.

Geometry and variational principles also underlie the theory of optimal transport, which was developed to address concrete problems — such as the efficient transfer of resources between two configurations — and has proven to be a surprisingly powerful tool in recent decades. The modern idea dates back to the Soviet mathematician Leonid Kantorovich, who provided its rigorous formulation in the 1940s. For his contribution — which was later extended to the economics of planning — Kantorovich received the Nobel Prize in Economics in 1975. His concepts are now applied to understanding a wide variety of processes, from the evolution of galaxies to the diffusion of biological agents and certain social dynamics.

In the OPTiMiSE project, we combine these tools to

analyze the mechanisms and principles that govern change. There are systems that evolve gradually and fluidly, like the melting of ice. Others undergo transformation through sudden leaps, like the opening of a crack. Still others appear stable, but accumulate tension until they reach a critical point, at which everything is reconfigured.

There are three broad families of problems, all attributable to variational models, and embody this tension between continuity and discontinuity:

→ **Gradient flows** Systems that evolve to minimize a certain type of energy, following the fastest path of descent. This is the natural framework for describing many phenomena of diffusion, aggregation and dissipation.

→ **Dissipative Evolution** Processes in which change occurs due to dispersion or irreversible mechanisms, such as friction, constraints or structural resistance. In these cases, evolution does not follow a simple energetic descent, but depends on more complex factors, which may include phenomena such as saddle-point equilibria.

→ **Rate-Independent Processes** Systems in which only the order of events matters, not the speed at which they occur. This occurs in many industrial transformations, threshold phenomena or certain social dynamics, where change occurs only when certain critical conditions are overcome.

One of the goals of OPTiMiSE is to build bridges between different forms of evolution: between continuous and abrupt change, between deterministic models and probabilistic descriptions, between systems in which mass is conserved and others in which it can appear or disappear, as it occurs in chemical reactions or in biological processes of growth and decay.

We would like to push the descriptive capabilities of mathematical objects to the limit, in order to address the broadest possible class of models with a minimum of structural assumptions. At the same time, we aim to identify general algorithms that allow us to efficiently calculate accurate numerical approximations.

It's not an easy kind of mathematics. But we hope that in the future the tools we develop will be able to address several real-world problems more clearly and rigorously: from climate to economics, from smart materials to artificial intelligence modeling. Ultimately, we are driven by a desire that, I believe, unites all scientific inquiry: the desire to recognize order, structure and also a little elegance in the transformations surrounding us ■



GIUSEPPE SAVARÉ,
Full Professor
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From mass migrations in the 19th-century United States to the prefects of unified Italy, the STATE-DEV project explores the forces shaping solid institutions. Understanding the state's past is crucial to addressing today's challenges: economic crises, migration flows and global mark

by Edoardo Teso @

The making of a social contract between citizens and institutions has never been a simple process. For states to truly function — to be able to raise resources, provide services and offer opportunities — three conditions are needed: a demand from society for a public presence, an administrative apparatus capable of responding to that demand and finally, institutions that operate in the general interest, uncorrupted by private connections. These words may seem obvious today, but a simple look at history reveals how fragile and complex the process of building state capacity has been. And this is precisely where research becomes relevant. Understanding how and why some states have managed to consolidate their strength while others remain weak is not just an exercise in economic history: it is key to interpreting the present. In the contemporary world, state capacity continues to make a difference. We see it in the way governments address economic and health crises, as in the case of the pandemic, when the strength or fragility of institutions made a difference for the survival of millions of people. We find it in migration policies, where a country's ability to manage arrivals and integration often makes the difference between social inclusion and social hostility. And again, we see it in global markets, where governments



A State That Works

are called upon to regulate technological giants and the new economic frontier, which often leave regulatory systems behind. The challenges we face today are not so different from those that communities and nations faced two centuries ago: how to provide essential public services, balance private interests and the collective good, and build capable and credible institutions. Studying the past, therefore, means equipping ourselves with better tools to interpret and deal with the present.

With the STATE-DEV project, supported by an ERC Starting Grant, I decided to address this very issue: understanding how states arise and develop that are capable of promoting economic and social development. To do so, I have looked back at two crucial historical experiments: post-unification Italy after the 1860s, and the United States in the second half of the 19th century and the first half of the 20th century. Two very different contexts, but united by a rapid growth in the role of the state, contexts where we can observe the conditions for the strengthening of institutions came into being, or not.

Questions whose formulation is simple but that are difficult to answer. Where did the demand for more state come from? Could technological progress and migration have driven entire communities to demand more schools, more infrastructure, more public services? In Italy what role did prefects — those officials who embodied the state's presence in provincial government — play in shaping administrative capacity and, with it, economic development? And again: what happens when the boundaries between public office and private capacity become porous, with government officials moving into businesses and private managers joining the state bureaucracy? Is this a virtuous circulation of expertise, or a channel that feeds favoritism and corruption?

At the heart of

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Bocconi University

STATE-DEV lies the attempt to answer these questions by integrating various approaches. Theory alone is not enough: you need data, archival research and empirical evidence. We will collect and digitize previously little-explored materials, from Italian municipal budgets to 19th-century American local newspapers, from logs of prefects' careers to logs of US business registrations. Thanks to new technologies, such as linguistic models applied to historical sources, we will build datasets that are set to remain a common resource for the scientific community and can be used by economists, historians and political scientists to pose new questions and test new hypotheses.

In this way, looking to the past is never a purely academic exercise. On the contrary, it becomes a laboratory for a better understanding of how institutions react to sudden challenges, how they succeed or fail. By examining the effects of European mass migration in the United States in the 19th century, we can find parallels with the migratory flows from Africa into Europe today. By analyzing the profile of the Italian prefect, we can ask ourselves how important the quality of bureaucratic leadership still is in achieving growth processes today. By studying the mechanisms of the “revolving door” between the public sector and the private economy, we can have a better discussion on how to regulate issues that also affect contemporary European and national institutions.

With STATE-DEV, we do not promise definitive answers, but new lenses for understanding a critical issue: what determines state capacity? And, above all, what can we learn from states that managed to succeed in the past? What's at stake doesn't only concern historians, but all of us. Because the quality of the state that we live in continues to determine, to a large extent, the possibilities for economic growth, social cohesion and the solidity of democracy ■





Voting from Afar

Millions of Italians abroad can vote, but fewer and fewer do so. Yet, in referendums and potential premiership elections, all votes count equally, so that people with only tenuous attachment to the country of origin could decide its political destiny. Perhaps it's time to ask what the requirements for active citizenship should be

by Davide Paris @

Voter turnout among Italians abroad has always been much lower than in Italy: in 2022 elections, only 26% of Italians abroad voted, compared to 64% of residents in Italy. Thus, in the referendums on employment and citizenship held on 8 and 9 June 2025, referendum advocates raised concerns that the low voter turnout among Italians abroad could lead to the constitutionally required 50% threshold of minimum participation — the so-called quorum — not being reached.

In theory, the problem could be very serious: in the only instance since 1997 in which a quorum was attained — the 2011 referendums on public water and nuclear power — voter turnout in Italy was 57%, but abroad only 23% of eligible voters cast their ballots. Overall turnout thus fell to 54.8%, dangerously close to the quorum's threshold. Therefore, in addition to overcoming an increasingly high level of abstentions in the electorate — because of those who either do not vote out of disinterest or strategically decide to stay at home to defeat the referendum — referendum advocates must also contend with the additional obstacle of increased political apathy among voters abroad, which makes reaching the 50% turnout even more difficult.

In practice, however, in the other five referendums in which Italians abroad have participated since 2003, turnout gaps have been much less marked: in the 2022 referendums, for example, 16% of Italians abroad voted, compared to approximately 21% of residents in Italy. The same was true for the referendums of June 2025, where turnout in Italy was 30.5%, while abroad it was 23.5%, in both cases far below the 50% plus one required for a referendum to be valid.

The issue, if anything, is another, and goes beyond the referendums themselves. The low voter turnout of offshore Italians should prompt reflection on the very advisability of including all Italians that reside abroad in the electorate. In June, a vote was held whether or not to repeal laws that only apply to those who live and work in Italy: is it right that those who have never lived in Italy or have not lived in the country for many years should also vote and even decide the outcome?

In other countries, a distinction has been made between the citizens that live abroad, granting the right to vote to those who are deemed to still have a strong connection to the mother country and denying it to those who do not. Italy has taken a different path.



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On the one hand, the right to vote is granted to all Italians abroad, regardless of whether they have ever lived in Italy or hold another citizenship. On the other hand, however, to avoid the disruptive impact of the enormous number of residents abroad on Italian politics, they were assigned a significantly smaller number of parliamentarians than they would have been entitled to if they had been living in Italy.

In the case of referendums, however, this solution of weighted voting, already highly questionable in itself, becomes impractical, because it is no longer a matter of electing a larger or smaller number of representatives, but of choosing between a Yes or a No vote, where each vote counts equally. Thus, the "weakened" vote that Italians cast abroad in the elections for the two chambers of the Italian Parliament becomes a full-strength vote in abrogative (and constitutional) referendums. The same conclusion applies to the proposal in favor of the direct election of the Prime Minister, as envisaged by the constitutional reform that would introduce premiership in Italy which is supported by the current ruling majority. If it were to be approved, voters abroad, who represent about a tenth of the electorate, would go from electing a small number of parliamentarians through their overseas constituencies to being the deciding factor in the main objective of general elections: choosing the Prime Minister and determining the composition of Parliament. This is a serious issue, of which the majority proposing the reform is aware, but for which it has so far failed to formulate a credible solution. In short, the vote of Italians abroad in referendums and the possible failure to reach quorums are only a minor aspect of a much broader issue. Giving all adult holders of Italian passports the right to vote in political elections and referendums without distinction is a very questionable choice. Though it is understandable to give say over fundamental decisions to citizens who have been abroad for short periods of time with the prospect of continuing to participate in Italian political life when they return to Italy, it is much more difficult to understand for descendants of Italians born and raised abroad, who are fully integrated in their own countries, where they are also citizens. A distinction within the quite diverse group of Italians abroad seems necessary: sometimes, in order to guarantee a right, it is necessary to place limits on it ■

The Power of Faces

Facial recognition technology is redefining the relationship between the individual and the state, shifting the balance between security and freedom. When the law is weak or slow to respond, it risks legitimizing abuse instead of preventing it. Constitutional safeguards must be written not only into the code of law, but into the very code that governs computers

by Federica Paolucci @

Artificial intelligence (AI) poses profound and unprecedented challenges to constitutional law. Nonetheless, facial recognition technology (FRT) represents one of the most emblematic of these challenges, because it describes how the vertical relationship of power between the individual and the state is recalibrated in the context of AI. Given this framework, my research “Constitutional Safeguards in the Age of AI. A Study on the Fundamental Rights Impact Assessment of Facial Recognition Technology” used the perspective of FRT as a laboratory to challenge the tensions between security, fundamental rights and AI governance.

The central intuition behind this research is that abuses of power may occur not despite the law, but through the law. The real risk of FRT is not only its misuse in practice, but its normalization through legislation that inadequately structures the procedures of authorization, application and oversight. If the law is weak, vague or discretionary, even a formally correct deployment will hollow out rights protections. This perspective guided the thesis: to test whether European regulation, and in particular the AI Act, truly embeds safeguards that can withstand the constitutional pressure of biometric surveillance.

Two cases are specimen of the issues at stake. The Clearview AI scandal — in which billions of images were scraped without consent and used to construct biometric databases — triggered regulatory interventions and sanctions across Europe and catalysed the drafting of the AI Act. The judgment in *Glukhin v. Russia*, decided by the European Court of Human Rights, confirmed the dangers of indiscriminate use of FRT in public surveillance, stressing substantial interferences but also chilling effects on the enjoyment of democratic freedoms. In this context, the AI Act represents the first attempt to respond, introducing a *lex specialis* for biometric identification systems. Among the other



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THE PAPER

Constitutional Safeguards in the Age of AI. A Study on the Fundamental Rights Impact Assessment of Facial Recognition Technology, by Federica Paolucci

obligations, for some notable high risk uses of AI, especially when a public authority is concerned, a Fundamental Rights Impact Assessment (FRIA) is required. Yet the instrument, as designed, places the burden primarily on deployers, those who utilize the technology. It risks becoming a procedural formality performed after technologies are already embedded in law enforcement practices. Thus, this thesis argues that this approach is insufficient. A FRIA that takes place only at the point of deployment comes too late: it cannot correct a legislative framework that has already failed to set substantive limits.

For this reason, this work reconceptualizes FRIA as a normative tool. It must be embedded at the stage of law-making, guiding Member States as they transpose the AI Act into national procedures. Within the year ahead, legislators will have to define who authorizes the use of FRT, under what conditions, with what limits and subject to which forms of oversight. The model I propose provides constitutional criteria for this task. It requires an *ex ante* test of legality and necessity before authorization regimes are designed. It insists on mapping which rights are structurally most exposed, recognizing the special vulnerability of some fundamental rights, such as data protection and the right to an effective remedy (Article 8 and Article 47, CFREU). It embeds remedial capacity into the very architecture of the law, ensuring that individuals are able to discover, challenge and seek review of FRT use.

The analogy with wiretapping is helpful. Here too, the law requires a prior judicial order and procedural guarantees, precisely because the power is too intrusive to be left to administrative discretion. Biometric surveillance requires the same constitutionalization. To regulate only the “use” by deployers without embedding safeguards in the legislative design would repeat the mistake of treating legality as sufficient in form while justice might be denied in substance.

Facial recognition is, therefore, more than a technological challenge: it is a test of whether constitutional law can prevent rights erosion through anticipatory design. A constitutionalized FRIA, placed at the level of legislation, enables Member States to avoid making the law itself the channel through which constitutional guarantees are emptied out in the age of AI ■

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Work That Creates Wellbeing

From company adaptation to new health needs, and to digital platforms that turn benefits into wages: Bocconi research and alumni experiences show that putting workers at the center means building stronger companies and more cohesive communities



Human Capital Is What Makes the Difference

Companies that invest in people gain resilience, motivation and cohesion, with positive effects not only on their business metrics but also on the surrounding social fabric

by Rachele Anconetani @

Global events of recent years — from the pandemic to climate emergencies and geopolitical strife — have highlighted the crucial importance of human capital to ensure organizational resilience in times of crisis (Kuckertz et al., 2020). A company's ability to overcome difficulties and regain momentum depends largely on the contribution of its people deploying skills, knowledge and personal energy (Musa and Aifuwa 2020; Delladio et al., 2023). In this context, corporate welfare policies play a strategic role, as they contribute to strengthening motivation, wellbeing and collective performance (Wei et al., 2020). Data from a 2024 SDA Bocconi study shows that companies that have devised a structured welfare plan have seen tangible benefits in personnel management: more than one in two companies in the sample have increased their workforce by more than 10%, and one in five has reduced turnover by a similar amount. The effectiveness of welfare is also evident on the generational front, as nearly half of new hires is under 30, and 15% of companies have managed to reduce turnover in the same age cohort by more than 10%. A survey by *Economia & Management* (Dell'Acqua, A., Anconetani, R., Colantoni, F., Santoli, E. "Il Ruolo Strategico del Welfare Aziendale", 2025) confirms that substantial investments, meaningful variety of services and a planned approach to corporate welfare are associated with higher levels of engagement, as well as a positive net balance between new entries and job endings. The benefits of integrated welfare aren't limited to what happens inside the company, however: they also have a positive impact on the wider social and economic fabric. The SDA Bocconi School of Management research highlights that corporate



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initiatives such as sustainable mobility or active employee engagement generate greater demand for local goods and services, stimulating community development. People-care interventions — from parenting support to flexible working hours — encourage a better work-life balance, favoring both internal cohesion and economic and social sustainability. Other initiatives such as volunteer programs, team building activities or personalized benefit packages also strengthen the sense of community and trust among employees.

Some Italian companies have already launched innovative projects: company summer camps for children, affiliated networks of healthcare services and programs designed to support families and the elderly. In the diversity of respective objectives, these experiences share the aim of transforming the logic of welfare into concrete practices capable of generating significant social impacts and increasing pride of belonging to an organization. Investing in corporate welfare is equivalent to adopting a long-term perspective on business development: organizations that integrate it into the business model can count on greater cohesion, motivation and resilience. At the same time, a solid internal welfare system creates a virtuous circle of relations within the community, where satisfied employees contribute to strengthening local growth and social stability. The pandemic experience has shown that companies capable of offering wellbeing and a balanced work-life tradeoff are the best positioned for the future. From this perspective, corporate welfare is not a cost, but rather a truly strategic investment in competitiveness and long-term sustainability ■

Healthcare Becomes Strategic

Check-ups, prevention, telemedicine and psychological help are increasingly part of corporate welfare packages, reshaping the balance between public and private spending on health and opening up a new front for inclusion

by Valeria Tozzi @

The inclusion of healthcare provisions in corporate welfare plans is experiencing a boom due to employees' growing need for social protection. These interventions fuel the private healthcare spending component, which had traditionally been relatively marginal. Generally, corporate welfare plans have been favored by the 2016 tax reform, which provided incentives for the conversion of productivity bonuses into welfare goods and services for employees. Over three-quarters of companies that have structured welfare plans offer healthcare benefits, often through industry funds or supplemental insurance coverage (Censis-Confindustria, 2024). Among SMEs, health provision increased from 22% of firms in 2020 to 30.8% in 2024, while additional insurance coverage was present in 43.4% of firms (Welfare Index PMI, 2024). In addition to complementary health insurance, the provision of direct services is growing: check-ups, agreements with healthcare facilities, telemedicine, prevention programs and psychological support. The pandemic has heightened the need for health services not only related to the management of work-related illnesses, also for



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household members (e.g. care for the elderly). Furthermore, new service delivery methods were launched during that phase: in 2020, approximately 14.7 million workers and family members become enrolled in supplementary health funds (Ministry of Health, 2023), and many companies introduced digital prevention and assistance packages, some of which were maintained even after the Covid emergency. On the demand side, 80% of welfare credits are actually spent by beneficiaries, while 38% of employees consider healthcare services among the most useful, second only to meal vouchers (Edenred Welfare Observatory – 2024). Healthcare has become a key factor in choosing a job and an indicator of the social role of companies that serve the “working community.” These dynamics are part of a broader trend that





sees the hybridization of healthcare systems. As highlighted by the SDA Bocconi Observatory on Private Healthcare Consumption (OASI Report 2023), the boundary between public and private is increasingly porous: total health spending is apportioned by government, households and businesses, generating a "hybrid system" in which the various components are intertwined. In this context, corporate welfare does not replace public healthcare provision, but complements it, expanding access to services not always covered by the National Health Service, particularly in areas such as dentistry, diagnostics or mental health. The expansion of corporate welfare brings both opportunities and risks with it. On the one hand, it strengthens the social role of firms, with positive effects on motivation and loyalty. On the other, it risks widening the gap between those who work for large companies and those who work in SMEs or the public sector, if this social innovation is not accompanied by adequate regulatory and inclusion tools. In short, health services in corporate welfare plans are now a significant component of private spending on healthcare. Their growth is part of a structural process of hybridization that is redefining the balance between public and private sectors. The challenge is to ensure that admixture contributes to strengthening the mission of the National Health Service, and does not create new inequalities, so that corporate welfare acts as a lever for sustainability and innovation ■



People and Business, the Possible Balance

For Giacomo Piantoni, Bocconi alumnus and HR Director of Nestlé Italy, caring for people means giving work meaning, attracting talent and strengthening competitiveness

by Michele Chicco @

In the space of a decade, the needs of the world of work have changed, and companies are scrambling to respond to the new needs of their employees. Giacomo Piantoni, Bocconi alumnus and HR Director for Nestlé Italy, has been on the frontlines of this transition, successfully implementing an "ecosystem" based on crucial keywords such as "trust and listening", also placing additional responsibility on the shoulders of individual managers.

→ *How has corporate welfare changed?*

Companies know they must be positive social actors and have understood they must ensure that people be and express themselves to their fullest at work, both as individuals and as professionals.

Companies' wellbeing and people's wellbeing are connected and interdependent. Caring for your collaborators means you're also looking after the business.

→ *How do we create this virtuous circle?*

There must be continuous listening and an ecosystem of initiatives; sending one-off messages simply isn't enough. An inclusive work environment, participative leadership, continuous learning and organizational agility are key elements. There are clear trends regarding new employees' needs: first and foremost, they increasingly care about physical and mental wellbeing. It's necessary to strike the right balance between time devoted to work and time dedicated to personal activities; without neglecting the fact that now work must have a deeper meaning in terms of the impact we want to have on the world. To raise greater awareness, we have activated emotional communities of practice: groups of people who lead bottom-up initiatives in areas such as Gender Balance, Disability, Youth, Culture and Leisure, which generate shared value for the individual and the company.

→ *How do we build corporate welfare systems suited to the times?*

Listening to employees and adapting your ecosystem is fundamental. To address physical and mental health issues, we have hired a doctor and collaborate with a psychologist who monitors



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HR Director of Nestlé
Italy

employees' physical and mental health on a voluntary basis. We also analyze health issues by organizational unit, mapping them so we can implement prevention and awareness-raising initiatives. We work closely with department heads: studies show that line managers have a greater impact on mental health than their partners. If a manager isn't aware of the impact they have on their people's mental health, there are human and business impacts. That's why we've launched training programs to raise awareness and foster managers' emotional intelligence.

→ *What's your vision on remote work?*

We have a model based on empowerment, delegation and trust which we call 'FAB' (Flexible, Adaptable and Balanced). There's no single rule across the company, but each team decides the right mix of remote and in-person work based on the type of work they need to do. What matters is the result.

→ *How did you notice that the world of work was changing?*

You can see it from our company climate surveys, by talking to people or observing their behavior. Take new dads: they're very different from the past. Ten years ago, when parental leave for fathers was only three days by law, we launched a program offering 10 days of paid leave to new dads. It had very little success. Four years ago, we raised the bar by introducing Nestlé Baby Leave, a 100% paid leave for new parents lasting three months: there was a 98% acceptance rate. Company policy has changed, but also the allocation of roles and duties within the family household is changing.

→ *Has this welfare ecosystem helped you attract and retain talent?*

Very much so. We have low turnover rates, but when baby boomers retire, there is going to be a hemorrhage of people who will have to be replaced. Young people are increasingly scarce, and they often decide to go abroad to live and work. Having a work environment that responds to the needs of our people helps engage them and contributes to their personal fulfillment as professionals and as human beings ■

Don't Call Them Benefits

Born from the idea of Bocconi graduates Giorgio Seveso and Luca Milesi, Tundr digitizes corporate welfare programs to transform them into an integral part of employee compensation making their use simple and personalized

by Michele Chicco @

They met as students in university classrooms and went on to become co-founders of an ambitious startup. After graduating from Bocconi, Giorgio Seveso and Luca Milesi chose to rewrite the rules of corporate welfare, focusing on technology to simplify programs and increase employee engagement. In just a few years, more than €20 million in services have been provided, and the company has raised over €9 million in two rounds.

→ *What are the new needs of personnel?*

Giorgio Seveso: For employees, corporate welfare is no longer an ancillary benefit: it supports purchasing power and is a true supplement to the salary package. Increased spending power is coupled with increasing personalization of welfare plans. We live in an era where various generations coexist within companies, each having very different needs, so the welfare plan must adapt to that.

→ *How do companies get ready?*

Luca Milesi: Companies must make sure to have knowledge of the two axes of corporate welfare development: analyzing the environment around individuals, to enable them to achieve the celebrated work-life balance, and listening to their own people, by using surveys, focus groups and personal interviews to understand the needs and develop an appropriate welfare plan for the workforce. Some companies can expand their offerings with psychological support, while others may be more suited to promoting sports activities.



LUCA MILESI and
GIORGIO SEVESO
Bocconi Alumni,
Co-Founders Tundr

→ *What's the winning mix?*

Luca Milesi: There's no one-size-fits-all solution; you have to know how to personalize. A strategic welfare plan defines concrete tools that can be translated into a very broad kind of usability for individuals, who can use their welfare credits for real needs. But a corporate welfare plan must take the company's strategic objective into account because it has an impact on performance and profitability. The effect is direct on talent management: corporate welfare affects turnover and retention rates; it mitigates quiet quitting, because people feel more engaged in the company's operations.

→ *How does Tundr navigate this scenario?*

Giorgio Seveso: Tundr draws on the experience of two fresh university graduates who found themselves in a job market where companies offered welfare plans alongside salary packages. We thought that world was overly complex, and wanted to facilitate the use of these welfare initiatives through digitalization. We make company benefits accessible and easy to deliver, by building an ecosystem where welfare is an integral part of the salary and becomes a reason for jobseekers to



choose one company over another.

→ *Where did you start?*

Luca Milesi: From what most distinguishes us: technology. We were the first to bring a payment card to the industry that can be flexibly tailored to the needs of individuals and businesses. We've created a welfare infrastructure that allows employers to load credits that employees can use with a standard card. We started with fringe benefits, with a card that provides access to over 800 brands at 80,000 points of sale without having to go through the traditional platform to download the voucher.

→ *What's been the response of business companies to your solution?*

Giorgio Seveso: We work with over 500 firms, from micro-businesses with 4-5 employees to multinational groups and listed companies. The feedback we get is the same: we enable welfare programs that are understandable, digital, effective and sustainable. Having tools that are very easy to use also leads to more accessible solutions, with higher engagement and better data collection. Analytics allows a company to be more precise in assessing the impact of a welfare plan and identify what needs to be improved.

→ *How do you see the future of the sector?*



THE BOOK

Today, the driving force of a company is no longer just individual talent, but the entire community that lives and operates within it. Leadership becomes widespread, combining challenge and care, and is grounded in a sense of belonging and community. Establishing and nurturing this sense of community is essential for companies - not only to face current challenges, but also to fully value the intricate web of interdependent lives. *Il lato umano dell'impresa* (Egea, 2025, 226 pages, €28, in Italian) invites us to rethink the beliefs that have shaped work and organizations.



Giorgio Seveso: We question ourselves every day. Companies are increasingly becoming brands whose mission is to attract talent, and corporate welfare helps retain young people. At Tundr, we want to continue democratizing benefits, adding modules that enable us to complement traditional vouchers with other initiatives that go beyond the mere provision of a wallet, things like daycare, an in-office gym and financial education ■



Where Stars Rule

Reviews and ratings shape tastes and decisions, but even experts observe, imitate and compete with one another. Understanding how a score or ranking is created means understanding the invisible power that shapes trust in the markets

by Linqin Huang @

In today's world, we are constantly guided by evaluations. Whether we are deciding which restaurant to try, which film to watch, which hotel to book or even which employer to work for, our choices are rarely made in isolation. Instead, they are filtered through the opinions of critics, experts and platforms that rank, star and score our options. These evaluations do more than inform individual decisions — they shape reputations, influence transactions and ultimately determine which products and services thrive. In this sense, evaluators are not just advisors but powerful gatekeepers in society.

Most of us assume that when an expert organization publishes an evaluation, it is based on objective, independent judgment. We expect consistency, transparency and fairness. But what if the evaluators themselves are influenced by factors we rarely consider? What if their judgments are shaped not only by the qualities of what they assess, but also by the pressures of competition and survival?

This tension becomes especially clear in industries like fine dining, where evaluation carries enormous weight. Consider the Chinese restaurant market, where two heavyweight guides — the Michelin Guide and the Black Pearl Guide — have been rating restaurants side by side for several years. Both are seen as arbiters of taste and quality, but their coexistence raises intriguing questions. Do they evaluate restaurants in isolation, or do they watch each other closely? How much of what we see as an “independent” assessment is influenced by organization strategy?

My research suggests that the answer lies somewhere in between. Expert rating organizations walk a fine line: if they diverge too much from their competitors, audiences may question their credibility. If they converge too much, they risk becoming redundant. To stay relevant, they must find what scholars call “optimal distinctiveness” — being similar enough to be trusted, but different enough to stand out.

Looking at thousands of restaurant evaluations in China



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between 2017 and 2022, I found a telling pattern. Restaurant guides tend to “imitate” one another in both which restaurants they cover and how highly they score them. The timeline of their expansion across Chinese cities shows that the mere observation of a competitor's evaluations can be highly influential. In some cities, such as Shanghai and Hong Kong, one guide entered first and the other followed later. In these cases, the newcomer's initial coverage overlapped by around 40%. By contrast, in cities where Michelin and Black Pearl entered simultaneously, their first-year overlap was much lower, closer to 15%. In other words, simply observing a competitor's evaluations can trigger “imitation,” shaping not only which restaurants are covered but also how independent judgements could be negotiated. The broader lesson here extends far beyond food. It shows us that evaluations — whether in dining, movies, universities or even credit ratings — are not neutral mirrors of quality. They are socially constructed, shaped by competitive pressures and strategic considerations. Evaluators are actors in their own right, trying to survive and remain relevant, and this inevitably influences the judgments they produce.

Why does this matter? Because we often put immense trust in these systems without questioning them. We treat rankings and ratings as if they were scientific facts, when in reality they are negotiated outcomes in a competitive arena. Recognizing this does not mean dismissing them altogether — expert evaluations can and do provide valuable guidance. But it does mean approaching them with a more critical eye, and being aware of the dynamics that lie behind the stars, scores and seals of approval.

Ultimately, expert rating organizations wield power because we let them. Their influence depends on our trust. By understanding that their evaluations are shaped not just by what they assess but also by how they compete, we can become more thoughtful consumers of their judgments — and perhaps even push for greater transparency in how these gatekeepers operate ■



Climate Justice

Courts are joining the fight against climate change, extending impact assessments to include both distant and future emissions. But while Europe is pushing for courts to have an active role, the US Supreme Court is ruling in favor of the centrality of politics in environmental governance

by Miriam Allena @

Before authorizing a project that could have a significant impact on the environment, a government must follow a series of procedural steps that analyze and evaluate the resulting environmental effects. This is the Environmental Impact Assessment (EIA), a transparent and participatory process that involves citizens and stakeholders, and considers possible alternatives and measures to reduce or offset negative impacts. First introduced in 1969 in the United States by the National Environmental Policy Act (NEPA), EIA has spread to many countries, including the European Union, where the first relevant directive dates back to 1985.

In recent years, the EIA has also taken an increasingly strategic role in the fight against climate change: many are now arguing that impact evaluations must not be limited to local context and the immediate effects of a project, but must also evaluate the long-term and global-scale climate consequences generated throughout the entire lifecycle of the project. In the European context, two recent decisions have caused considerable uproar: one by the British Supreme Court (*Finch v. Surrey*, 20 June 2024) and the other by the EFTA Court (Case E-18/24, 21 May 2025), which have maintained that in oilfield development projects the EIA must also include downstream emissions, i.e.



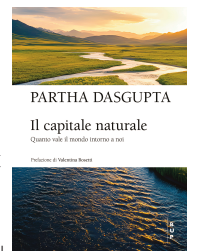
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those resulting from the refining of oil and its final use as fuel in other processes. The Courts' argument is that the oil refining does not break the causal link between extraction and the subsequent production of emissions because, once extracted, it is virtually certain that the carbon contained in the oil will be released into the atmosphere in the form of CO₂. For this reason, the EIA must also consider these downstream emissions generated by third parties that are potentially distant in time and space from the plant facility subject to the impact assessment. The case of oil is very different from, for example, that of a steel plant



THE BOOK

Our economic models have given us an incomplete picture. The parameters we apply tell us that our economies are healthy because they are growing. However, they fail to account for the fact that our growth is fueled by a resource we exploit as if it were free and treat as if it were infinite: Nature. It is time for our economic models to show us the full picture, without distortion. That is precisely what *Il capitale naturale* by Partha Dasgupta and Valentina Bosetti (Bocconi University Press, 2025, 224 pages, €24.50, in Italian) does.



producing metals going into the manufacturing of automobiles: in the latter case, it would be more difficult to argue, for example, that emissions generated by cars in circulation are directly linked to the metalworking production process. The fact remains that the rulings of the British Supreme Court and the EFTA Court are groundbreaking and involve the resolution of highly complex legal and technical issues.

This emerging jurisprudence deserves attention for three reasons. First, because the scope of the EIA is being significantly expanded on the basis of a regulatory framework that is objectively ambiguous and open to different interpretations, and this confirms the European Courts' ability to play an active role in the ecological transition by interpreting existing legal instruments in (sometimes very) evolutionary ways.

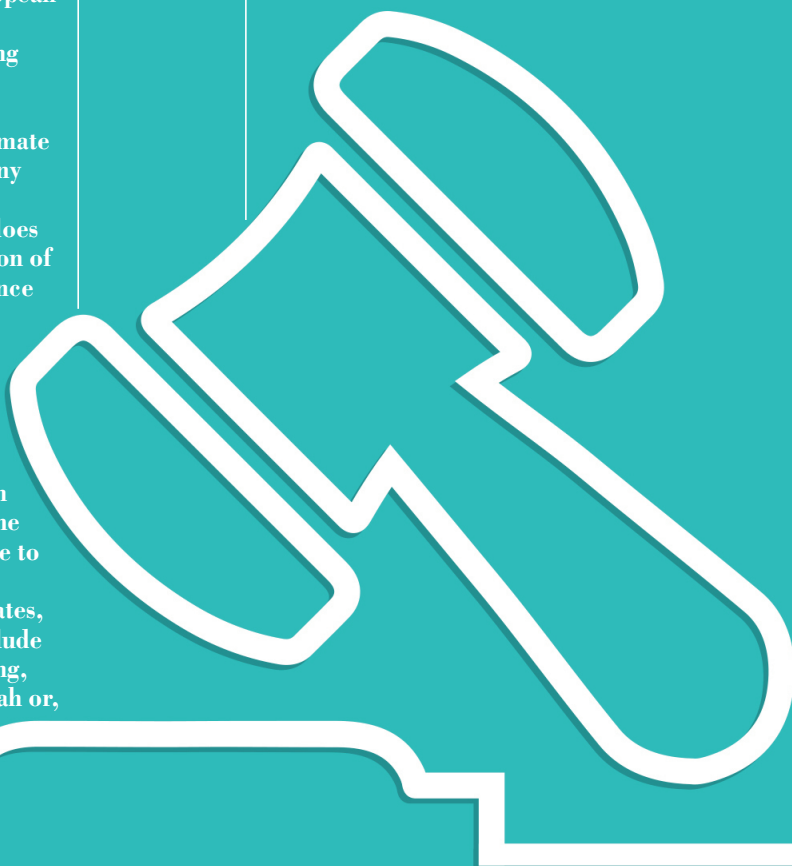
Secondly, because its application to the climate context demonstrates — should there be any need — that modules of procedure have substantial implications: although an EIA does not directly dictate the approval or rejection of a project, in practice it can strongly influence the outcome.

Thirdly, because while in Europe we are witnessing a broadening of the scope of the EIA through courts, the opposite trend is observed in the United States.

The US Supreme Court, in the very recent case *Seven County Infrastructure Coalition v. Eagle County* (May 2025), concerning the construction and operation of a railway line to facilitate the transport of oil from Utah to refineries in Louisiana, Texas and other states, ruled against the related EIA having to include the indirect environmental impacts resulting, upstream, from increased oil drilling in Utah or,

downstream, from additional refining of crude oil at destination sites.

Regardless of the individual solutions adopted, the recent decision by the US Supreme Court — although the case not entirely comparable to the ones considered by European courts — is striking for one fundamental aspect: the explicit affirmation of the central role of politics and democratic processes in defining climate governance. It is a clear message, which invites reflection on the ever-slippery boundary between law and politics (and between jurisdiction and administration) ■





Why Do We Obsess With Divisive Issues?

A Bocconi study explains why stark differences in policy stances capture voter attention, pushing candidates and parties to concentrate on those very issues. This has an impact on polarization, single-issue parties and redistributive policies

by Barbara Orlando @

A party having a single obsession. Two candidates who radically differ on a single issue, but have similar views on all the others. Voters who, even though they have all the information, end up focusing only on what is divisive. It's not just an impression: according to a new theoretical model, our brains just work that way. And politics knows it very well. In the article 'A Model of Focusing in Political Choice' published in *Journal of Politics*, Salvatore Nunnari (Bocconi) and Jan Zapal (CERGE-EI) introduce a theory that explains why voters disproportionately focus on the issues where candidates have polar views. The consequence is a perverse dynamic: politicians end up accentuating those differences to attract attention. The result? Greater polarization, less attention to shared policies and, paradoxically, less rational choices even among informed voters. "Our model starts from a simple intuition: when two candidates are very different on one issue and similar on others, voters end up weighing the divisive issue quite



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A Model of Focusing in Political Choice,
by Salvatore Nunnari and Jan Zapal

heavily,” explains Nunnari, Associate Professor of Economics. “But this has profound consequences for the political offer.”

FROM RECENT THEORY TO PAST NEWS

In the 2016 US presidential election, Hillary Clinton and Donald Trump were opposed on Obamacare and the Paris Agreement, but similar on other issues such as infrastructure investment or the Trans-Pacific Partnership (TPP). Yet, public attention almost exclusively focused on the issues where the two candidates appeared most distant. The same applies to the strategic use of the media. Trump, the authors note, used Twitter as a way to distract opinion: when the press increased coverage of the Mueller investigation into Russian interference in the 2016 election, the president would tweet about China, immigration or jobs. As expected, media attention shifted.

The military, the paper continues, also consciously uses these attention-grabbing mechanisms. In 2020, to influence Trump’s decisions on how to respond to an Iranian attack, the Pentagon deliberately included the extreme option of killing General Soleimani, hoping it would appear so extreme that more moderate options would be sought. “Both politicians and institutions understand that public attention can be distorted, and they act accordingly,” Nunnari comments. “What our study does is formally model this mechanism, showing its systemic implications.”



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SINGLE-ISSUE PARTIES AND STOLEN ATTENTION

The model also explains why parties with no chance of victory — such as single-issue parties on the environment, immigration or anti-Europeanism — still manage to influence the political agenda. Votes aren’t needed; simply being on the radar of public attention is enough. This generates a domino effect: the major parties must react, polarize and differentiate themselves. “In our model, smaller parties act as levers of attention: they can shift the focus of voters toward specific issues,” explains Nunnari. “And often, that’s exactly what they are after.”

THE PARADOX OF REDISTRIBUTION

The most counterintuitive part of the study concerns taxation. By analyzing voter behavior toward redistributive policy proposals, Nunnari and Zapal show that, as inequality increases, demand for redistribution can decrease. The reason? Wealthy voters, seeing their tax burden increase, tend to focus only on the cost to them, ignoring the collective benefits. Poorer voters, on the other hand, underestimate the benefits of higher taxes. The result is distortion: attention isn’t directed where it should be. And redistributive policies struggle to emerge, despite macroeconomic data justifying their urgency.

A NEW LENS FOR UNDERSTANDING POLITICS

The study is part of a new current in behavioral political economy, which integrates voters’ cognitive biases into rational choice models. The theory proposed by Nunnari and Zapal not only helps explain seemingly irrational electoral behavior, but also offers tools for interpreting political leaders’ communication strategies. “It’s not enough to ask voters what they are thinking. We must also ask them where they are looking and who is deciding what to look at for them,” Nunnari concludes ■

Beyond the Office

Work may no longer be tied to a single place, but it's still shaped by power dynamics. In the digital era, labor rights must follow employees wherever they are, redefining the boundaries between subordination and freedom

by Elena Gramano @



Historically, employment was defined by the place where it occurred. The worker's presence on the employer's premises symbolized subordination; it justified protective legislation on safety, working hours and employer control.

In recent years, work has escaped those walls. Remote working technologies have enabled millions to perform their jobs from homes, cafés or co-working spaces. This smart or agile model of work has become the new frontier of employment. It detaches labor from a fixed time and place, offering flexibility for workers and efficiency for employers.

What distinguishes this new form is not independence from an employer, but autonomy within subordination. Employees remain legally bound by their employment contracts, yet they now have significant control over where and when to work. The employment relationship persists — but its symbols have changed. The desk and the clock are no longer defining features.

And when work takes place everywhere and nowhere, protection can no longer depend on walls or shifts. It must follow the person, not the place.

In this context, the smart (or remote) worker embodies a paradox. Freed from the office, they gain flexibility, privacy and the ability to blend professional and personal life. But that same freedom can dissolve boundaries, exposing them to new forms of pressure and surveillance. Technology has made it easy for employers to monitor output remotely, track log-ins, measure keystrokes and evaluate performance through algorithms. The traditional “directive power” of the employer — once exercised face to face — is now embedded in digital systems. Subordination becomes invisible but pervasive, exercised through data rather than direct command. Meanwhile, the classic functions of labor law — protecting physical safety, limiting working hours, ensuring rest — must be reinterpreted.

What does “health and safety at work” mean when the workplace is a kitchen table? How can the right to disconnect be enforced when connectivity is the very condition of employment?

The redistribution of autonomy within employment does not erase the power imbalance between employer and worker; it simply



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transforms it. The employer's control is no longer exercised through immediate supervision but through the architecture of the organization itself — the systems, processes and digital platforms that define what work must be done and how.

Even in the most flexible arrangements, workers remain part of a structure they do not control. They can choose the place and time of work, but not its meaning, its goals or the standards by which it is judged.

This observation redefines the essence of subordination. It is no longer about constant oversight but about organizational dependence — the fact that the employer determines the framework within which the worker operates. The smart worker may seem autonomous, but the autonomy is procedural, not structural.

The implications are profound. Labor law, once designed to regulate power inside factories and offices, must now address the complex reality of digital, networked work. It must protect not only the worker's physical integrity but also their personal autonomy, privacy and time.

At the same time, the employment contract, far from being outdated, remains a remarkably flexible tool. It can adapt to the changing nature of work, provided the law evolves to match it. What must change is the conceptual lens: we must understand “work” not merely as time and effort exchanged for pay, but as a social relationship shaped by power, technology and identity.

The future of labor law lies in its ability to act as an innovation facilitator — a system that helps societies adapt to economic transformation without sacrificing fairness or dignity.

Protection must become more personal, more portable and more attuned to the realities of digital life. It must account for workers who are both autonomous and subordinate, connected and isolated, flexible yet precarious.

Work has escaped the confines of the factory and the office. It now lives in clouds, networks and devices, in the spaces between professional and private life. The task for the law — and for society — is to ensure that as work evolves, its human core does not disappear.

Autonomy without protection is fragility; subordination without freedom is exploitation ■

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Commerce Never Sleeps



From market-supporting platforms to omnichannel strategies, from unified models to Chinese-led innovations, to the race against time in deliveries: Bocconi researchers and alumni discuss fast-paced change in the industry

From Stores to Digital Feeds:

Marketplaces, social commerce and mobile devices have transformed retail. The frontier today is unified commerce, a unique ecosystem where data and technology create seamless, borderless shopping experiences

by Deborah Raccagni @



Shopping Is Being Unified

E-commerce is getting a new look. Today, selling online no longer means just having a proprietary website. Marketplaces account for more than 60% of sales online in Europe, while in Italy social commerce is expected to grow by more than 25% in 2025, reaching almost €6 billion in value. Consumers are increasingly discovering new brands on social media, and millions are buying directly from Instagram or TikTok. All this happens mainly via smartphone: mobile is now the dominant channel and has made purchasing behavior more and more “instant.” The consumer expects a simple, fast and barrier-free path, where technology is never an obstacle.

In this distributed and competitive scenario, the only real distinguishing factor is the customer experience. Mere presence on several different channels is not enough: a unique and fluid path needs to be offered, allowing customers to perceive the continuity of the brand wherever they encounter it. This is precisely where data comes into play: collecting, interpreting and using it in real time is becoming the lever to personalize every interaction and make technological complexity invisible.

This need has driven an evolution — from the early multichannel approach, to omnichannel, and now to the latest frontier: unified commerce.

The fragmentation of the early stages

In the early 2000s, companies multiplied points of contact: stores, websites, call centers, marketplaces. It was the era of multichannel: more purchasing opportunities, but disconnected systems. It featured different online and offline promotions, misaligned stocks, inconsistent experiences. This model has paved the way for greater accessibility, but with obvious limitations.

THE SEARCH FOR CONSISTENCY

With the spread of smartphones and social media, omnichannel arrived in around 2010. The goal: to merge online and offline in a smoother experience. Phenomena such as showrooming (try in store and buy online) and webrooming (get information online and buy in store) revealed new habits. Meanwhile, companies began to collect and use customer data to personalize communications and services, though these systems still remained partially separate.

CONVERGENCE

Today’s focus is on unified commerce, a total integration in which a single platform manages inventory, orders, payments, CRM and logistics in real



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time. It is no longer the customer who has to adapt to silos and internal procedures: it is the company that ensures consistency across every channel. The advantages are twofold. For the consumer, it means frictionless shopping journeys, greater confidence in product availability, fast delivery times and a closer relationship with the brand thanks to tailored offers and recommendations. For the company, it means overcoming the challenge of integrating physical and digital stores into a single ecosystem, reducing inefficiencies and building a stronger relationship with customers, based on shared and consistent data. Here artificial intelligence really makes a difference. In a fragmented system it can only work on partial data, with limited results. In a unified context, however, it has access to complete and updated information in real time, thus being able to offer more accurate demand forecasts, more effective automation and truly relevant suggestions for each customer.

UNITY IS STRENGTH... BUT HOW MUCH DOES IT TAKE TO GET THERE

Integrating management systems, POSs, platforms and payment systems requires investment and a focus on data and training. But the benefits are greater: fewer mistakes, greater satisfaction, loyalty and the ability to adapt to emerging trends with agility. In the end, what is truly at stake is the bond between customer and brand — strengthened by the consistency between physical and digital experiences — and the inclusiveness made possible by technologies that communicate with one another.

Today, however, the journey is still in its infancy: only 5% of retailers have already achieved the status of leader in unified commerce, with fully integrated experiences between online and brick-and-mortar, while almost half are still in the early stages. However, those who have already made the leap see real benefits: reduced fulfillment costs by around 30%, faster sales growth and increased customer loyalty. The direction is clear, but there is still a long way to go.

HOW PURCHASES WILL BE MADE TOMORROW

Unified commerce is not a goal, but an evolving process. The challenge for companies will be to make complexity invisible and reveal only what matters: a fluid, consistent and valuable experience. This is the phygital direction we are moving toward: retail becoming increasingly digital, and e-commerce becoming increasingly similar to the physical, for commerce without an “on and off” switch and without borders ■

When Sellers Push Digital

In B2B omnichannel strategies, it is crucial to convince clients and sales networks to use new online channels. A Bocconi study shows how the online sales push improves performance when coupled with professional training and incentives

by Paolo Guenzi @

In pursuing omnichannel strategies, many business-to-business (B2B) companies are facing transition stages in which they must add and integrate digital channels — e-commerce platforms, for example — to the traditional touchpoint for clients, namely sales staff. A widespread issue in this process is informing clients that these channels exist. Another, more importantly, is persuading them to use them — to change their longstanding habits, learn how to use technological tools that are not always intuitive and user-friendly, and give up various service components as well as the long-time interpersonal relationship established with the sellers. Even more complicated for companies can be obtaining the consent and support of their sales network, which often reacts with suspicion and concern to this strategic evolution, fearing replacement or demotion. However, it is essential for persuading B2B clients to switch to the use of new digital channels.

Our B2B study, “Online Sales Pushes: Whether, When and Why They Enhance Sales Performance,” analyzes the phenomenon of the online sales push, i.e. the effort made by businesses to encourage their sellers to have clients promote new digital channels, at least for certain tasks during certain stages of the process of purchasing and using some products. This effort may include internal communication activities, professional sales staff training and the restructuring of objectives and incentives. The aim would be to involve sellers in actively encouraging their clients to use the new digital channel. We examined the relationships between 94 sellers at a B2B company and their clients, comparing data from before and after the introduction of the digital e-commerce channel. By analyzing not only the relationships with 2,731 clients over a period of 21 months, but also achievements in terms of various



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types of online and offline sales interactions (basic products and complex solutions), our findings have allowed us to understand: 1) the extent to which sellers implement the online sales push; 2) how those same sellers change their behavior during the online sales push; and 3) whether this change in behavior translates to better sales performance.

The outcomes demonstrate that following the online sales push, sellers significantly increased the number of monthly interactions with their clients, both in person (+483 touchpoints) and online (+3,801 touchpoints). More specifically, sellers spent less time selling basic products, instead using it to train clients on how to utilize the new channel and sell complex solutions with higher added value. As a result, the business analyzed managed to increase both its online sales and its sales of complex solutions. These outcomes were amplified by the ability of sellers to devote their “freed-up” time to in-person visits to high-potential clients and to train less technologically-savvy ones, in particular, on how to use the new channel. It took approximately six months after the introduction of the online sales push to achieve this, which highlights that this strategy requires a reasonable amount of time to produce the desired effects.

In short, our study shows that for companies that wish to introduce digital channels (for example, an e-commerce platform) into their go-to-market strategies, it is essential to push for the active involvement of their sellers to facilitate and accelerate their adoption by clients. During the process, salespeople must be inspired not only to intensify their communication efforts with clients through personal and impersonal channels, but also to selectively reallocate these efforts among various clients according to their potential and technological readiness. This should free up time from low-value-added tasks to allocate to more complex opportunities, implying the necessity to couple online sales push strategies with consistent incentive, professional training and coaching initiatives. The reason is simple; the vital contribution of sales staff cannot be overlooked during the successful introduction of new technological channels ■



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B2B online sales pushes: Whether, when, and why they enhance sales performance, by Vamsi K. Kanuri, Johannes Habel, Nawar N. Chaker, Deva Rangarajan, Paolo Guenzi



The Platforms Powering the Market

They are the backbone of digital commerce — without them, sellers and customers could not meet. Yet their stability is threatened by operational risks, cyberattacks and a shortage of qualified skills

by Pietro De Giovanni @

In the context of modern retail, e-commerce has emerged as an alternative and fundamental channel, rewriting the rules of sales strategies to reach and engage a vast global customer base. Beyond transactions, e-commerce has created an ecosystem in which unique and continuous experiences fuel customer loyalty and sustain long-term growth. Successful e-commerce platforms are sophisticated

tools, equipped with an in-depth understanding of every aspect of operations, from customer management to product delivery. These platforms navigate with agility through the complex network of sellers and customers, integrating physical and digital channels to their advantage. However, to excel in this global economy, proactive risk management is essential to preserve the business

model and ensure an exceptional shopping experience for customers. When thinking about risks in e-commerce, attention is often focused primarily on consumer risks — such as credit card fraud or failure to receive purchased products — and on vendor risks, such as logistics problems or cybersecurity breaches. Nevertheless, a thorough risk analysis also requires examining risks for platform operators, who connect consumers and sellers in the digital marketplace and without whom e-commerce could not exist. Research conducted within the Sustainable Operations and Supply Chain Monitor at SDA Bocconi School of Management highlights the evolution of modern digital supply chains, in which e-commerce platforms play a crucial role as vital intermediaries between sellers and buyers. Without the optimal functioning of these platforms, neither buyers nor sellers can fully benefit



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from the enormous opportunities offered by e-commerce. Therefore, ensuring the stability and reliability of e-commerce platforms is the first step toward enabling successful e-commerce, founded not only on the success of individual transactions but also on the prosperity of the entire ecosystem that parallels the physical one.

These findings, however, are followed by significant challenges that platforms must address to ensure a safe and seamless shopping experience. One of the main concerns emerging from our studies is the weakness in the integration of operations among all actors involved, which leads to inefficiencies, delayed deliveries and missed business objectives. For example, the misalignment between online and physical inventory creates situations where a product displayed as available online may actually be out of stock in warehouses, causing delivery delays and customer disappointment. In addition to operational issues, other critical challenges include the risk of unauthorized access to platform systems, which can compromise the security of customers' sensitive data. In fact, e-commerce platform operators are continually subject to cyberattacks of varying scope and nature, and only the presence of robust and impenetrable systems can prevent the corruption or destruction of sensitive data — safeguarding not only the trust of customers but also the integrity of the platforms themselves and the brands of the sellers showcased on digital storefronts.

To these operational and IT challenges, another far more pressing issue must be added: the shortage of qualified and experienced personnel. In a digital world where artificial intelligence systems and chatbots are increasingly widespread and aimed at replacing people — especially in managing online services — the lack of specialized personnel to effectively manage operations and coordinate the digital supply chain enabled by online platforms emerges as one of the most concerning weaknesses. Indeed, finding and retaining staff with the necessary skills can be a difficult task, as the labor market is constantly evolving and the demand for qualified professionals often exceeds supply. This shortage of experienced personnel can have significant consequences for e-commerce platforms, vendor companies and buyers, undermining service quality and operational efficiency. In the future, it will therefore be essential to invest in training and skills development, as well as in attracting new talent through competitive incentives and a stimulating, innovative work environment, in order to provide online platforms with the lifeblood needed to face the ever-evolving challenges of the digital marketplace ■



THE PAPER

**Operational Risk Management in E-Commerce:
A Platform Perspective**, by Natalia Tabares Urrea,
Behzad Maleki Vishkaei, Pietro De Giovanni



Time Is the New Currency

Consumers' impatience is reshaping markets and strategies: ever-faster deliveries have become a competitive factor — but they also raise ethical and social questions

by Sara Valentini @

What is the price of impatience? More than we might think. We are present-biased consumers: we choose immediate benefits even when it would be more rational to wait (Bartels & Urminsky, 2011). Online, this tendency intensifies: just a few minutes of waiting can flip a choice (Hui, Thakor & Gill, 1998). In digital retail, time has become a currency: saving it wins more sales, repeat purchases and loyalty (Masuch et al., 2024; Harter et al., 2025).

E-commerce has turned instant gratification into a competitive standard. Amazon built its promise on it: first with Prime, then with same-day delivery, and soon with drones and robots designed to shrink waiting times to just minutes. In multi-seller marketplaces, speed is no longer a mere service feature: it is an implicit price factor that reshapes demand, margins and rankings. Whoever arrives first wins the customer.

In food delivery, time matters even more: the entire game is played in minutes. Deliveroo, Just Eat and Glovo compete on coverage and the stopwatch. Consumers constantly face a trade-off: a “good” pizza in 20 minutes or an “excellent” one in 45? More often than not, speed wins. Platforms know this and invest heavily to reduce waiting times — even tracking riders in real time and optimizing every move — strategies that work but raise ethical concerns about labor and surveillance.

A STUDY TO QUANTIFY THE VALUE OF WAITING TIME

Together with Elisa Montaguti, Federico Rossi and Chaewon Seol, I am conducting an ongoing study aimed at quantifying the value of impatience — that is, delivery time in digital commerce — and understanding how shorter waits reshape demand and market structure.

Our analysis leverages a unique natural setting: the launch of a food-delivery platform in an Italian city at a time when it was the only operator in the local market. We have geo-referenced data on orders, actual delivery times and customer-restaurant distances. Crucially, we observe a significant share of users who change addresses within the city during the observation period: when their “favorite



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restaurant” ends up a few kilometers farther after moving — while remaining available on the platform — the increased distance causes measurable changes in their choices. These moves, unrelated to price or quality changes, allow us to estimate precisely the effect of waiting time.

Preliminary evidence shows that:

→ Each additional minute of waiting is worth about 15% of the order price for the average customer; the most impatient are willing to pay up to 70% more for faster deliveries.

→ Proximity has long shielded many mediocre sellers: being close meant being chosen even without excellent quality.

WE THEN ASKED: WHAT HAPPENS IF DELIVERY TIMES COLLAPSE THANKS TO NEW TECHNOLOGIES LIKE DRONES AND ROBOTS?

Our simulations indicate that cutting waiting time by 75% doubles the market share of the best performers and threatens about one-third of existing players, especially in urban centers. Conversely, high-quality restaurants and stores located outside city centers suddenly become far more competitive. Platforms can also monetize impatience: offering a priority delivery option that shortens waiting by 10% for a moderate fee can boost profits by about 30% and — paradoxically — even increase the wellbeing of the most impatient customers, who pay more but get what they value most: minutes saved. Examples of this logic are already visible: Amazon charges extra for same-day delivery; Glovo and Deliveroo offer priority options; grocery services such as Instacart sell earlier delivery slots.

IMPLICATIONS FOR FIRMS, CITIES AND POLICY

These findings contribute to a broader debate on how technology is redefining competition (Goldfarb & Tucker, 2019) and concentrating markets by lowering search and transport costs (Kwon, Ma & Zimmermann, 2024).

In my research on digital shopping behavior, I have observed how integrating physical and online channels has transformed retailer profitability; today, the new competitive frontier is speed as a product attribute.

For companies, this means rethinking logistics as a strategic lever: segment customers by willingness to pay for speed, invest in reliability and service quality, and choose technology partners that can guarantee ever faster delivery.

For cities, it means preparing for a transformation of the retail landscape: if distance no longer matters, many neighborhood stores may lose their reason for being, with consequences for urban vitality and community life.

But the economy of impatience is not neutral. Ultrafast delivery raises ethical and social questions: working conditions for couriers, digital surveillance and the environmental footprint of ever-faster fleets. Businesses and policy makers will need to balance economic opportunity with social sustainability to avoid turning the race for speed into new forms of inequality or unsustainable pressure.

Ultimately, one question will guide consumer choices, business strategies and public policy: How many minutes am I saving, what is it worth to me and how much am I willing to pay?

In a world where technology erases distance, only those who can turn speed into value and quality into true differentiation will thrive ■

The East Is Driv

According to Rodrigo Cipriani Foresio, Bocconi alumnus and General Manager of Alibaba for Southern Europe, China dictates global trends: from AI to livestreaming and ultra-fast logistics. To compete, Italian SMEs must bridge cultural and organizational gaps and invest in new skills

by Pietro Masotti @

With artificial intelligence, livestreaming and ultra-fast logistics, innovation is driving e-commerce, albeit at different speeds around the world. But to understand where new developments are emerging and where digital commerce is heading, you have to look East, at least from an Italian perspective. In this sense, Rodrigo Cipriani Foresio, a Bocconi alumnus who is now General Manager of Alibaba Group for Southern Europe, has a privileged vantage point. He has one eye on what is happening early in China and the other on the landscape of the Old Continent.

→ *What are the main drivers of global e-commerce development today?*

There is not just one answer, it depends on where we are talking about. In China, e-commerce is the cutting edge of commerce, accounting for almost 50% of all retail, and Alibaba has one billion customers. In the United States it is 25%, in Europe 20%, in Italy it stops at 10%. In China, not only is the market the largest, but also the most cutting edge, suffice it to say that 95% of transactions take place on a mobile device.

→ *What are these innovations that we still haven't seen in Europe, or barely?*

Two or three years ago there was a livestreaming boom in China: today it is almost impossible to sell a



ing Innovation

product without showing how it is used. Influencers have become central figures, capable of intercepting young audiences on behalf of brands — even super luxury Italian brands — and can really affect sales numbers. Another key driver is logistics. In the East there is very fierce competition on ultra-fast deliveries, now the benchmark is to be able to deliver anywhere in 30-40 minutes. For this reason, alliances have been created within our group between companies that provide different services. This ensures that, for example, the same delivery person can deliver both a pizza and perhaps even a bag purchased online.

→ *Alibaba, however, remains a pure marketplace. Is it a model that holds up well even in a changing context?*

Absolutely yes. Being a pure marketplace means that companies that open a digital storefront have full control over pricing, shipping and promotions. We provide the platform, access to a billion consumers and supporting data, but the store remains the brand's. This model, created in China, is popular precisely because it does not interfere with the strategies of individual brands and leaves companies in full contact with the customer.

→ *How are Italian companies reacting to this approach? Are they ready for it or would they prefer a "turnkey" service?*

This is a sore point because, for years, I have been asked by European companies when we would open the marketplace in Europe. Now that we are doing it, we realize that there is a lack of preparation. Those who do e-commerce in Italy, in particular, have the Amazon model in mind, in which they sell stock to an intermediary who does everything else. Our model requires direct management, a dedicated team or an external partner. A change of mentality is needed that involves more effort, but I believe also more long-term benefits. There is greater awareness of this in medium and large companies, and today more than 500 Italian companies successfully sell in China. But if we look at SMEs, we still notice big gaps, especially due to the lack of key professional figures such as export managers, logistics experts or digital e-commerce managers.

→ *Where is AI already being applied today and what potential does it hold for the development of e-commerce?*

In China, AI is already pervasive. It is used to



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generate marketing content, creating complex videos even from a simple photo. It offers highly personalized purchase recommendations, based on the user's browsing and purchase history. It is crucial in customer service and the optimization of advertising investments, suggesting the most effective keywords for example.

→ *Is Made in Italy still attractive to Chinese consumers?*

Chinese consumers today are young, very focused on sustainability and eco-friendly products. But they are still not loyal to brands. They are increasingly better prepared, they read labels and their trust has to be earned every day. Ten years ago, they were hungry for Western products in the country, today they have begun to develop local alternatives of the highest quality. In the beauty sector, Chinese, Japanese and Korean products are already eroding market share from Western products, and this trend will soon arrive in fashion as well. Competition is higher than ever.

→ *What is the advice you would give to an Italian company that wants to enter the Chinese market?*

The question I hear most often is: "If I invest x, how much will I earn?" Here, this is not the right approach. A platform like Alibaba is not just a sales channel, but a strategic partner. It is a tool for communicating, for dialoguing with young people, for understanding the trends that will come. It is a huge door on an equally gigantic market that, Alibaba or not, must still be overseen. In 2022 we published a SDA Bocconi study coordinated by Professor Carnevale Maffé, relating to the impact of Alibaba in the first 10 years in Italy. Around 500 companies were operating on the platform and exported €5.4 billion to China. Considering that there was €18 billion in Italian exports to China, this means that almost a third passes through Alibaba. Now we are updating the data, which we will publish shortly, and everything is growing. They are still small numbers, however, considering that it is less than 5% of Italy's global exports and that China is the second largest market in the world. In short, there is ample room for growth. The commitment on the part of Italian companies, however, must be long term, with a horizon of at least three years. And it is not enough to manage everything remotely, because Chinese partners show that they appreciate those who invest in their country with a physical presence and dedicated human resources more. In short, it's time to plant the seeds: the ground is fertile, the Chinese appreciate our history and the quality of our products — but we need to prove that we're as ready and capable as they are ■

The Price of Sustainability

Executive bonuses are going green, signaling a dramatic change in the way business success is measured. Yet as sustainability enters incentive schemes, the real challenge lies in distinguishing genuine commitment from greenwashing

by Francesca Franco, Claudia Imperatore @



The past two decades have brought a fundamental shift in how companies define success. Firms are now expected to create value not only for shareholders but also for employees, customers, communities and the environment. This shift is being driven by powerful forces: tightening regulation, investor activism and public expectations for businesses to play a responsible role in society. Large institutional investors increasingly scrutinize how firms manage environmental, social and governance (ESG) issues, believing that sustainability is a proxy for long-term resilience. When ESG failures make headlines — from data breaches to pollution scandals — the fallout isn't confined to the firms involved. Reputations, valuations and even entire industries can be affected. Against this backdrop, one of the most visible changes in corporate governance has been the rapid rise of ESG-linked executive compensation. In the early 2010s, only a handful of companies included sustainability metrics in their bonus plans. Today, the majority of publicly listed firms do. The message is clear: companies are putting their money where their mission statements are. The logic behind this evolution is straightforward. By tying a portion of executive pay to measurable ESG outcomes — such as emission reductions, employee safety or diversity targets — boards can align management incentives with the company's stated values and long-term strategy. ESG-linked pay can also serve as a public signal that sustainability commitments are real, not rhetorical. For investors and regulators, that signal is becoming increasingly important.

But the shift isn't purely altruistic. Many companies are learning that ESG isn't a cost center — it's a risk-management tool and a source of competitive advantage. As we find in our recent paper titled "Executive Bonus Adjustments to Industry ESG Violations," when firms in a given industry face repeated ESG controversies, the entire sector's reputation suffers. Investors become cautious, regulators intensify oversight and customers start looking elsewhere. Leading companies are therefore embedding sustainability into executive pay not only to demonstrate responsibility but also to protect their brand and industry position from reputational spillovers. Consider the ripple effects of a single environmental or labor scandal. Even firms with spotless records may experience reputational damage



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simply by association. To reduce exposure to this kind of collateral risk, forward-looking organizations are moving proactively. Integrating ESG performance into bonus structures sends a clear message internally and externally: this company takes accountability seriously.

Still, the trend has its skeptics. Critics argue that ESG targets are often too vague or subjective to be meaningful. When goals aren't well defined, executives may hit easy milestones, claim success and receive inflated rewards — all without generating real change. Others warn of "greenwashing by design," where ESG-linked pay becomes more of a public relations tool than a true performance driver.

The difference between success and symbolism lies in execution. The most credible ESG pay systems share a few traits. First, the chosen metrics are specific and quantifiable — for example, "reduce carbon intensity by 10% within two years" rather than "improve environmental impact." Second, the targets are material to the business: they focus on sustainability issues that directly affect the firm's financial performance and stakeholder trust. And third, boards disclose progress transparently, allowing investors to evaluate whether ESG outcomes are real or cosmetic. In practice, this shift requires more than a tweak to the bonus formula. It demands a new mindset about what drives corporate value. ESG-linked incentives only work if they are integrated with strategy and backed by a clear governance framework. When boards treat ESG pay as a communication exercise, results are underwhelming. When they use it to reinforce accountability and long-term planning, it can reshape company culture and performance. For many firms, the adoption of ESG-linked compensation also reflects competitive dynamics. In industries where reputation matters — such as finance, energy or technology — being seen as responsible can help attract customers, investors and talent. Conversely, lagging behind on sustainability can be costly, as younger generations of employees and consumers increasingly demand that companies "walk the talk."

The bottom line: ESG-linked executive pay is here to stay. What began as a governance experiment has become a mainstream practice — one that blends ethics, economics and strategy. Its effectiveness will depend on whether companies treat it as a meaningful management tool or a box-ticking exercise. For executives and directors, the challenge is to strike the right balance. ESG goals must be ambitious enough to matter but grounded enough to be measurable. Incentives should motivate real progress, not just polished reports. As investors, regulators and society continue to raise the bar, tying compensation to sustainability performance may soon become not just a sign of leadership — but a baseline expectation ■



THE PAPER

Executive Bonus Adjustments to Industry ESG Violations,
by Francesca Franco, Claudia Imperatore, Mariya N. Ivanova

First, Consumers Need to Belong

Branding today depends on signaling identity rather than purchasing: the reverse funnel turns marketing on its head and transforms companies into builders of community and shared meaning

by Chiara Piancatelli @

Digital channels, the growing role of reputation and the influence of communities have rewritten the rules of marketing. Value-based proximity and a sense of belonging no longer represent the final destination of the relationship with a brand, but rather the starting point. This is where the concept of the reverse funnel comes into play: an approach that overturns traditional marketing logic and places identity and community at the center. The reverse funnel is based on a radical shift in perspective, in which the customer has to connect with the brand's values before even discovering its products. It's no longer a matter of persuading consumers with rational levers, but of activating an aspirational mechanism. Mission, vision and purpose become entry points into a relationship where affinity is the first step: the consumer chooses to be emotionally invested in a brand they perceive as authentic, consistent and relevant, even before trying its offerings. This reversal has profound consequences for corporate strategies: while the traditional funnel prioritized conversion and performance marketing, the reverse funnel directs resources toward brand equity, identity storytelling and community building.

BUSINESS CASES

To fully understand the logic of the reverse funnel, it's helpful to critically examine what's happening in the fashion and luxury industry. Traditionally, luxury was associated with high price, exclusivity, superior quality and investment value. A rational logic, therefore, founded on tangible attributes. Today, however, luxury is no longer just about possession, but above all about the ability to create an emotional experience. Price matters less and cultural impact, social relevance and the ability to express identity and belonging have become much more important.

Especially among younger generations, status no longer derives from sizable durable goods, but from accessible micro-luxuries, objects and experiences that function as signals of belonging to a shared cultural code. The Pop Mart case is illuminating: the Chinese brand has transformed \$10–\$20 collectible dolls into veritable cult objects. During a single TikTok livestream, Labubu dolls managed to generate over \$1.5 million in sales. The secret lies in the combination of affordable pricing, limited editions, and a strong emotional charge. Unboxing a Labubu has turned into a ritual, a community experience to be shared and enjoyed collectively. Purchasing the product is not a first step, but the final gesture of an identity choice that has already occurred the moment the consumer identifies with the values of the group. The good or service thus becomes a badge of belonging, rather than an end in



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itself. It is in this context that the Golden Goose Arena must be understood, where padel is just the beginning of a journey into style, culture, and authentic connection. The customized Golden Goose Arena aims to be a hub for all sports enthusiasts in Milano, both professionals and amateurs, individuals who care not just about courts and rackets, but a true community where they can immediately feel at home and connect to the brand's values.

This approach is further strengthened by the "Business to Human" concept, which emphasizes the need to build an authentic, empathetic and emotional connection in a world that is increasingly becoming phygital. In the reverse funnel logic, consumers first fall in love with the narrative of the brand and only afterwards purchase the product that represents it.

IMPLICATIONS

The ongoing transformation forces companies to radically rethink their role. They shall be no longer directors of demand, but custodians of shared values. Brands that embody an authentic purpose will be chosen not for what they offer, but for what they represent.

In a world where competition is increasingly based less on product and more on identity, early loyalty represents the true competitive barrier of the future. Consumers are not just looking for objects or services, but for opportunities to define who they are and who they want to be. Brand success, therefore, will no longer be about gaining loyal customers after the purchase, but about earning their trust even before the transaction takes place. The reverse funnel is the paradigm that best describes this transformation: a model that puts values ahead of product, community before conversion, and identity ahead of the transaction. For business leaders, it represents both a challenge and an opportunity: to be not just sellers of goods and services, but architects of cultural belonging ■



Towards Nuclear 4.0

Going beyond fears and ideological preconceptions, physicist Antonio Ereditato emphasizes the importance of placing science back at the center of the discussion on this energy source. Because progress never stops, and technical solutions are available today at more sustainable costs that can make a difference

by Diane Orze @

Science is under attack, and not just on TV talk shows. Ideologies and fears often take the place of data and rational argument, especially when it comes to energy. This is where physicist Antonio Ereditato begins — co-author, with colleague Stefano Buono of *Il nuovo nucleare* (Egea, 2025, 136 pages, €16, in Italian) — to explain how nuclear energy today is not so much a technology to be defended, but rather a testbed for our ability to discuss the future rationally. Focusing on topics including the fourth generation of reactors that are safer and more sustainable, the geopolitical challenges of energy independence and the decisive role that nuclear power could play in reducing global inequalities, Ereditato calls for a reflection that goes beyond the technical — what's at stake, he argues, is the very quality of our democracy.

→ ***The title of your book is clear: “Placing science back at the center”. What do we have to defend science from today, and why has nuclear power become the terrain of this cultural battle?***

Everyone can agree that today science is attacked by sectors of society and politics, both in Italy and abroad. For some, science and its method — which over the centuries have opened the way to knowledge and led to us living better and longer lives — have become a topic of debate, that is sometimes shouted and without arguments, as often happens for the most disparate subjects. And the issue of energy is no different, with positions that are ideological and not based on quantitative arguments. Unfortunately, the battle is not cultural, but reflects an unjustified attack against culture.

→ ***You write that “energy is power”, and that energy independence will be one of the crucial factors for the democracy of the future. In this scenario, what is the real strategic issue of the return to nuclear energy? Is it more technical, geopolitical or economic?***

In the book we show that energy is the power to do things, to build and create, to keep life alive. And so, control over energy and the achievement of energy independence have become drivers of democracy and equality. Three issues — technology, geopolitics and economics — are intertwined and contribute equally to motivating the need for a calm reflection on future energy portfolios, in particular on the contribution of nuclear power.

→ ***What really distinguishes the “new nuclear” from the old? Can you explain what it means, in practice, to move from the third to the fourth generation of reactors?***

The generational transition is similar to what occurred with the invention of personal computers: there was a shift from the large centralized mainframes of the 1970s and 1980s to widely distributed computing

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Research Professor,
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power. The new reactors are smaller (from tens to a few hundred Megawatts, compared to a few Gigawatts of today's large reactors), cheaper because they are modular and industrially built and, above all, safer, more efficient and more sustainable. Technically, this can be achieved, for example, through the use of fast neutrons, cooling with molten salts or liquid metals, and by using waste from old reactors as an essential part of the fissile material.

→ ***In the book you argue that nuclear power will also be fundamental to reducing global inequalities. How can it contribute to rebalancing relations between the Global North and South?***

It's only natural that a broader distribution of energy would help reduce inequalities and better meet the needs of the most disadvantaged societies. The Global South has basic needs that are often not recognized: food, water, knowledge, democracy and, last but not least, access to clean, cheap and efficient energy, such as fourth-generation nuclear power.

→ ***What are the main applications of civilian nuclear power today outside of energy production? And are there any that remain relatively unknown to the public?***

One of the many examples are medical applications. As we discuss in the book, today nuclear power contributes to modern diagnostics and medical therapy. Cancer radiology treatments save millions of lives around the world, and thanks to diagnostic devices such as PET, serious diseases can be identified earlier and more accurately. Topics like these, often seen as too technical or already settled, tend to stay out of public debate in favor of issues that are more immediate or emotionally charged. It's essential for professionals in the field — including scientists themselves — to do more and do better when it comes to informing and communicating.

→ ***From an economic point of view, is nuclear power really competitive with renewables today? And what conditions would allow it to retain its competitiveness?***

Today the cost of the nuclear kilowatt hour is low, although the construction costs of the current generation reactors (to be amortized in any case over many decades of uninterrupted operation) have reached tens of billions of euros for a large plant. For the future, the combination of small, inexpensive and widespread SMRs (Small Modular Reactors) will lead to a further reduction in energy costs for users, also taking into account the lower costs of transport, management and the drastic reduction of complex ancillary systems.

→ ***Let's talk about costs and construction timelines: how much does bureaucracy in Europe affect the development of new nuclear projects today? And what needs to change?***

The time required for the design, authorization and construction of a nuclear reactor depends on the country, whether in Europe or other parts of the world, and is actually very lengthy. Streamlining many of the procedures or creating 'fast-track' channels between the authorities of different countries could help standardize reactor design and thus enhance their modularity, with positive effects on costs. All this is facilitated by the fact that these are small devices, with a low environmental impact, less complexity and cost, and designed with passive safety criteria that should help to greatly reduce the complexity of bureaucratic and authorization procedures.

→ *In the book you address the issue of fake news and unfounded fears. How can nuclear power be communicated today without slipping into technocracy on one side or denial on the other?*

To quote our book: by placing science at the center. By using quantitative arguments that are as objective as possible. By speaking calmly of safety, costs, benefits and the many positive side effects, such as the ancillary production of rare earths, hydrogen and industrial heat, and the possibility for SMRs to act as "nuclear scavengers" by consuming the radioactive waste accumulated around the world over the last 80 years.

→ *Let's talk about social acceptance. In Italy, despite past referendums, polls show a growing support for nuclear power. How do you think public opinion has changed?*

Three main factors: 1) the need for decarbonization, which is an important issue for the younger generations, 2) an awareness of the significance of economic factors, which have come to the fore due to the recent international turmoil over energy, and 3) the fact that between the reactors currently in operation and fourth generation reactors, the same difference exists as that between an old car from the 1950s and today's modern cars, with lots of active and passive safety systems, and which cost, consume and pollute less.

→ *France has just relaunched its nuclear program. Can Italy afford to stay out of this European development? And what would the economic consequences be for our country?*

France has always adopted a bipartisan policy on energy and nuclear power in particular, aiming for energy independence and economic convenience. It is no coincidence that the French will probably be the first in Europe to benefit from the first fourth-generation reactors, produced by Stefano Buono's Newcleo. If Italy is not a part of this new "gold rush" the price to pay will be very high: one group of countries will dictate the economic and political agenda to the others.

→ *You experienced the transformation of CERN from a young physicist to a laboratory director*

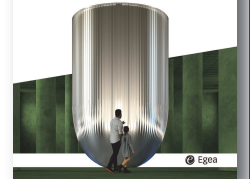


THE BOOK

What if we were to discover that the real green revolution isn't about solar panels or wind power, but about a technology that public debate in Italy has often dismissed as dangerous or outdated? What if nuclear energy, instead of belonging to the past, turns out to be a decisive card for the future of energy? When it comes to atomic energy, collective memory immediately recalls Chernobyl and Fukushima. Yet, beyond the headlines and age-old fears, science has continued to work quietly. Physicists Stefano Buono and Antonio Ereditato discuss this in *Il Nuovo Nucleare* (Egea, 2025, 136 pages, €16, in Italian).

STEFANO BUONO
ANTONIO EREDITATO
Il nuovo nucleare

Rimettere la scienza al centro



at the University of Bern. How important is the European research ecosystem today in the race for the energy of the future?

As Mario Draghi recently said, Europe risks political irrelevance. I would add it even risks economic irrelevance if it does not focus decisively and coordinately on science and technological development, mitigated and guided by those social and ethical principles that have always been the trademark of our continent since the post-war period. Let's not forget that Europe (and Italy) may lack major energy resources, but it holds considerable soft power in its engineers, researchers and technologists, and their remarkable and widely recognized expertise.

→ *The book also talks about the space economy, medicine, batteries, diagnostics. Which field of application of nuclear power are you most passionate about today?*

I can say that I am personally excited by all the potential developments you listed. Perhaps the link between new nuclear power and the space economy and medicine are the two aspects most present in the collective imagination.

→ *The book closes with a "look towards 2050": a world where nuclear power is widespread, safe and green. Is this a realistic scenario or the hopeful vision of optimistic scientists?*

We believe, with the optimism of reason, that our outlooks are realistic views of the world to come.

→ *If you could speak directly to Italian students and young researchers, what would you tell them about the future of nuclear power?*

To approach the new nuclear age just as they do the future of bioengineering, quantum computing or cosmology: by following their curiosity, guided by scientific rigor and driven by the ambition to build a better world ■

LET'S MAKE THE FUTURE

Reimagine the future
with us to make it happen.



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REIMAGINE



Artista, autrice, imprenditrice e simbolo di una generazione: il dietro le quinte del fenomeno **TAYLOR SWIFT**

