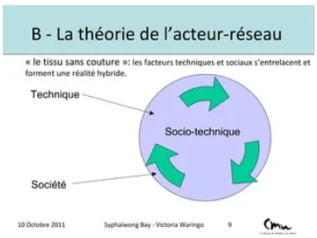
The misunderstanding of excessive communication (2)

Why do socio-technical networks thrive on translation?



Long version

1. From the dissemination of innovations to the building of networks

A first conclusion — In the first article of this series, we started with a seemingly simple question: Do we communicate too much or too little when it comes to explaining complex innovations? An examination of the work of Herbert Simon and Everett Rogers led to a first conclusion. The main problem is generally not an excess of information but the difficulty of building a shared understanding. The more complex an innovation, the more explanations, reformulations, and mediations it requires.

A deeper question — This observation, however, leaves a fundamental question open. Who performs this mediation work? How do actors with different interests, skills, and languages manage to build a sufficiently common understanding to act together? To answer this question, we must shift our perspective. Having studied the diffusion of innovations, we must now examine the construction of the networks that make them possible. This is precisely the subject of the work of Michel Callon, Bruno Latour, and John Law, who show that socio-technical networks do not pre-exist the exchanges that pass through them but are constructed, maintained, and transformed through a continuous process of translation.

2. Michel Callon and the sociology of translation

A shift in perspective — The work of Everett Rogers helps us understand how innovations spread within a population. However, it leaves a crucial question partially unanswered: how are the networks of actors that make this diffusion possible formed? It is this question that Michel Callon addresses in an article that has become foundational to the sociology of science and technology, published in 1986 under the title "Elements for a Sociology of Translation."

A broader definition — From this perspective, translation does not simply refer to the passage from one language to another. It corresponds to a set of operations through which different actors manage to build connections, coordinate their actions, and align their interests around a common project. Translation thus becomes a mechanism for the formation of collectives as much as a mechanism for communication.

The network as an outcome — This approach leads to a significant shift. Networks are no longer considered pre-existing realities within which actors exchange information. On the contrary, they appear as the result of a continuous process of networking. A network exists because actors gradually manage to define common objectives, coordinate their actions, and stabilize their relationships.

Problem framing — The first step described by Callon is problem framing. An actor or group of actors formulates a problem and proposes a particular way of understanding it. In doing so, they also identify the other actors involved and define the role they could play in resolving the problem. Problem framing thus creates an initial common framework that allows different actors to recognize themselves in the same situation.

Defining a common question — Every collective endeavor begins with this fundamental operation. Even before seeking solutions, it is necessary to define what constitutes the problem. This step is often more difficult than it seems, because the actors involved do not necessarily share the same concerns. What appears to be a priority for some may seem secondary to others. Constructing a common problem therefore already involves a process of translation.

Engagement — Once the problem is defined, it is still necessary to convince the various stakeholders that it is in their interest to participate in its resolution. Callon refers to this second step as engagement. It involves setting up mechanisms to bring different stakeholders together in the same process. Engagement aims to create convergence between interests that, initially, may be distinct or even contradictory.

Aligning expectations — This operation is not about eliminating the differences between stakeholders. Rather, it seeks to build common ground between their respective concerns. An investor, a public administration, a technical operator, and a local community do not expect the same benefits from a project. Yet, collective action becomes possible when each identifies sufficient reasons to participate in the same process.

Enrollment — The third step is enrollment. The stakeholders who have agreed to participate in the project must now have their roles clarified and stabilized. Each must know what they are supposed to do, what responsibilities fall to them, and how their

actions fit with those of the other participants. Enrollment transforms a convergence of intentions into a more structured organization.

Stabilizing positions — This stabilization always remains relative. Roles can be renegotiated, responsibilities modified, and balances reassessed. Nevertheless, no collective project can function sustainably without a certain degree of clarification of the functions assumed by each stakeholder. Here again, translation plays a central role, as it makes these roles understandable and acceptable to the various participants.

Mobilization — The final stage identified by Callon is mobilization. It is not enough for actors to be identified, interested, and recruited. They must also actively act within the network. Mobilization corresponds to the moment when the relationships built during the previous stages produce concrete results. The collective then ceases to be a mere possibility and becomes an operational reality.

Getting a collective to act — Mobilization often constitutes the decisive test of translation. The agreements reached must withstand the constraints on the ground, the divergences of interests, and the uncertainties that accompany any collective action. A network only truly exists when it is capable of producing coordinated behaviors despite the diversity of the actors that compose it.

A contemporary perspective — Contemporary projects combining digital technologies, public institutions, private companies, and local communities perfectly illustrate this dynamic. Their success depends less on the quality of an isolated actor than on the ability of the network as a whole to maintain sufficiently stable alignments between very different partners. This stability never arises spontaneously from the mere coexistence of actors.

Translating to sustain — From this perspective, translation is not a peripheral activity added to an already established network. It is one of the mechanisms that allows the network to exist, develop, and endure over time. Every new explanation, every reformulation, every attempt at harmonization contributes to this alignment process that makes collective action possible.

An essential conclusion — Michel Callon's main lesson can be stated simply: the network does not precede translation. It is born from translation. The relationships between actors, the convergence of interests, the institutional roles, and the forms of cooperation result from a continuous process of making things intelligible. Therefore, the question is no longer simply how much information should circulate, but how to maintain the translation processes that allow the network itself to survive.

3. Bruno Latour and the reference chains

Beyond diffusion — While Michel Callon shows how networks of actors are constructed, Bruno Latour is more interested in how facts, data, and knowledge circulate within these networks. His work seeks to understand how local realities, observed in a particular place, can gradually become usable elements in distant decision-making spaces. This question is central to many contemporary projects combining fieldwork, expertise, and governance.

The Boa Vista topofil — Among Latour's best-known texts is The Boa Vista Topofil. Based on a study conducted in the Brazilian Amazon, he describes the work carried out by researchers seeking to understand the characteristics of a territory. The interest of the narrative lies not only in the description of the fieldwork. It consists primarily in showing how a complex reality is progressively transformed into data, documents, and representations capable of circulating far beyond the place where they were produced.

A now classic demonstration — This text has become a reference because it highlights a fundamental mechanism. Between the forest observed in the field and the scientific report consulted in a laboratory or government office, there is no direct relationship. A long series of intermediate operations is necessary. Observations are recorded, classified, measured, recorded, compared, and then transformed into inscriptions usable by other actors. It is these successive transformations that Latour seeks to make visible.

Circulating without moving — The problem facing researchers is actually quite simple. How can a forest be circulated without moving the forest itself? How can a local reality be made present in places where it does not physically exist? The answer lies in producing representations reliable enough to allow this reality to act at a distance. Data, maps, charts, or reports thus become means of transporting reality.

The paradox of inscriptions — Latour refers to these representations as inscriptions. An inscription allows certain characteristics of a reality to be preserved while making it transportable. A map can travel, whereas a territory cannot. A data table can be transmitted across the globe while a patch of forest remains stationary. The paradox is that these records distance us from reality while simultaneously allowing us to refer to it.

Productive reduction — Every transformation, however, involves a reduction. A map contains less information than a territory. A statistical table contains less detail than a social reality. A measurement necessarily simplifies what it observes. Yet, this apparent loss also constitutes a gain. By reducing complexity, records make comparison, calculation, decision-making, and circulation possible. Part of reality is relinquished to allow the essential to travel.

Losing to circulate — This idea occupies a central place in Latour's work. For a reality to circulate through a network, it must be progressively transformed. Each step discards certain elements and retains others. The goal is not to reproduce reality in its entirety, which would be impossible, but to preserve the characteristics necessary for action. Circulation thus relies on a succession of controlled simplifications.

Reference chains — Latour describes this process as a reference chain. Each link in the chain transforms what it receives before transmitting it to the next step. Measurements become data. Data become tables. Tables become reports. Reports become decisions. Each element depends on the preceding ones while producing a new form adapted to its own context of use.

Contemporary chains — This logic extends far beyond the scientific domain. In traceability systems, supply chains, carbon markets, and digital finance systems, comparable mechanisms are constantly at work. A locally observed reality is progressively converted into information, evidence, certifications, and then into assets that can be mobilized by actors far removed from the field. Circulation always relies on a succession of transformations.

Chains of mediators — Contrary to a simplified view of communication, no fact circulates in isolation. Between its point of origin and its point of arrival, multiple mediators intervene. Technicians, experts, institutions, certification bodies, digital platforms, public authorities, and economic actors all participate in the transformation and transmission of information. Each mediator contributes to the continuity of the chain while modifying what they transmit.

Active circulation — Mediators do not simply passively transport content. They select, reformulate, interpret, and reorganize information according to the constraints specific to their environment. Circulation thus appears as an active process of continuous transformation. What arrives at the end of the chain is never exactly identical to what was at its origin, even if a rigorous link remains between the two.

Spokespeople — It is in this context that Latour attaches particular importance to spokespeople. Certain actors take charge of a local reality in order to make it present elsewhere. They speak on behalf of a territory, a community, a technical system, or a set of data. Their function is not simply to transmit information; it is to maintain a credible link between an original reality and the spaces where this reality must be recognized and taken into account.

A special responsibility — The role of the spokesperson is always delicate. He must simplify without distorting, make intelligible without betraying and adapt his speech without breaking continuity with what he represents. Any translation carries a risk of loss or excessive transformation. This is why the credibility of networks depends largely on the quality of the mediations which ensure circulation between their different levels.

An understanding of complex projects — This analysis provides a better understanding of major contemporary projects combining natural resources, digital technologies and public institutions. Between a forest, a mine, a carbon credit or a digital asset, there is never an immediate relationship. A multitude of actors intervene to produce the measurements, evidence, certifications and representations which make these realities mobilizable in broader economic or political spaces.

A general lesson — Bruno Latour's main lesson can be stated simply. A reality only circulates if actors continually ensure its translation. When a chain of mediation is interrupted, circulation slows down and eventually disappears. What ceases to be translated gradually ceases to be visible, understandable and usable. Translation is

therefore not a supplement to circulation; it constitutes one of its fundamental conditions.

4. Networks are fragile structures

After the network is built — The analyses of Michel Callon and Bruno Latour show how actors manage to build networks and circulate facts, data, or representations through chains of translation. One question remains open, however: What becomes of a network once it is established? Can it be considered definitively stabilized, or must it continue to be maintained to survive? John Law's work makes an essential contribution to this question.

John Law — Like other proponents of actor-network theory, John Law refuses to consider organizations, institutions, or technical systems as naturally stable realities. In his view, a network is always the provisional result of a set of relationships between human actors, technical devices, rules, procedures, and material objects. What we call a network is never a thing; it is an arrangement.

Heterogeneous arrangements — This notion of arrangement is important. Contemporary networks typically combine very different elements: technologies, legal standards, infrastructure, government agencies, businesses, local communities, financial mechanisms, and information systems. Their coherence does not result from a natural unity but from ongoing coordination between components that operate according to sometimes very different logics.

Apparent stability — When a network functions correctly, this complexity tends to become invisible. Actors then have the impression of operating within a stable, coherent, and sustainable system. However, this stability is more of an effect than a definitive state. It results from the network's ability to keep its various elements sufficiently aligned to allow for collective action. What appears solid is often more fragile than it seems.

Precarious stability — One of John Law's central ideas is that no network is ever definitively stabilized. The relationships that compose it can always be modified, challenged, or weakened. Interests evolve, priorities change, new actors appear while others disappear. What has been built can therefore also be undone. Stability is never a given; it must be continually rebuilt.

Constant transformations — This precariousness is particularly evident in complex projects. Technologies evolve, regulations change, markets shift, and political contexts shift. A network that functions well today may encounter difficulties tomorrow due to factors that didn't exist when it was created. Its adaptability then becomes as important as its initial capacity for development.

Maintenance work — Consequently, maintaining a network becomes an activity in its own right. Relationships must be nurtured, commitments reaffirmed, procedures updated, and objectives regularly clarified. This work is often less visible than the launch or innovation phases, but it largely determines the collective's lifespan. A neglected network generally ends up losing its coherence.

The invisibility of maintenance — Because it rarely produces spectacular events, this maintenance work often goes unnoticed. Stakeholders readily notice the creation of a new device or the signing of an important agreement. They are far less aware of the numerous daily operations that allow the system to continue functioning. Yet, these discreet activities often constitute the true condition of its stability.

The risks of misalignment — As a network develops, the risks of misalignment increase. Stakeholders may interpret the objectives pursued differently. Initial priorities may be forgotten. New issues may arise without being immediately integrated into the shared vision. When these discrepancies accumulate, coordination becomes more difficult, and tensions tend to multiply.

Ordinary divergences — These phenomena do not necessarily result from open conflicts or major oppositions. They often appear gradually and almost imperceptibly. Stakeholders continue to use the same words, but they no longer attribute precisely the same meanings to them. They participate in the same project while developing increasingly different understandings of its goals or methods of operation.

The consequences of misunderstanding — When left unaddressed, these discrepancies can have significant effects. Decisions become more difficult to coordinate. Expectations diverge. Misunderstandings multiply. The network continues to exist formally, but its capacity for collective action gradually weakens. The breakdown generally doesn't occur abruptly; it results from an accumulation of insufficiently corrected misalignments.

Translating to maintain — This is where translation regains its full importance. In the perspective opened by John Law, translating is no longer simply about building a network or disseminating an innovation. It is also about maintaining the conditions for its coherence over time. Every explanation, every reformulation, every clarification helps to reduce the gaps that inevitably appear between the different actors.

Translation as maintenance — This maintenance function is particularly visible in networks that bring together different professional fields. Technical developments must be explained to decision-makers. Institutional constraints must be understood by operators. The expectations of local areas must be made visible to designers. Translation then acts as a mechanism for the continuous correction of discrepancies produced by the very dynamics of the network.

Repairing rather than repeating — What may appear, from the outside, as excessive repetition thus takes on a different meaning. Successive reformulations do not simply serve to reiterate the same points. They allow for the re-establishment of alignment, the integration of new stakeholders, the correction of misunderstandings, and the adaptation of the project to evolving contexts. Translation often amounts less to repetition than to repair.

A major consequence — If this analysis is correct, then the question of whether we communicate too much must be reformulated. In a complex socio-technical network, the main challenge is not simply the flow of information. It lies in the ability to maintain the relationships that make this flow possible. Translation then appears not as an incidental cost, but as one of the conditions for the very sustainability of the network.

Conclusion — From translation to chains of intelligibility

A shift in perspective — The analyses of Michel Callon, Bruno Latour, and John Law lead to a particularly significant shift in perspective. Translation no longer appears as a secondary activity accompanying collective projects after their conception or launch. On the contrary, it becomes one of the fundamental mechanisms that make these projects possible, enable their development, and ensure their continuity over time.

A single logic in three forms — Callon shows that networks emerge from processes of problematization, engagement, recruitment, and mobilization. Latour shows that facts, data, and representations circulate only through chains of mediators and spokespeople. Finally, Law shows that networks remain coherent only through ongoing work of maintenance, realignment, and upkeep. In different forms, these three approaches describe the same reality: collectives cannot sustain themselves.

Translation as a condition of collective action — A common idea thus runs through all of these works. Socio-technical networks rely on continuous processes of intelligibility. Actors must understand the problems that concern them, the roles they play, the information circulating, and the objectives they collectively pursue. Translation thus appears as one of the ordinary conditions of collective action.

A new question — This conclusion, however, leads to a further question. What happens when the objects circulating themselves become increasingly abstract? What becomes of the work of translation when networks combine blockchain, tokenization, finance, regulation, natural resources, territorial development, and digital technologies within a single framework?

Toward chains of intelligibility — Contemporary digital finance systems exhibit precisely this characteristic. They connect numerous actors, mobilize several languages simultaneously, and manipulate objects whose understanding is becoming increasingly distant from ordinary experience. In such a context, translation no longer serves merely to build or maintain networks. It is gradually becoming a true infrastructure of intelligibility.

A transition to the third article — It is this invisible infrastructure that we will examine in the third and final installment of this series. After showing why complex innovations need to be explained, and then how networks thrive on translation, we will need to understand how digital finance ecosystems produce, maintain, and organize the chains of intelligibility without which no sustainable coordination is possible.