Rethinking Flow Beyond Control
An Outreach Legal Essay

Jean-Sylvestre Bergé

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An Outreach Legal Essay

Jean-Sylvestre Bergé

Contents

Foreword

This work stems from a broader reflection that led to a legal essay published in French in April 2021, *Les situations en mouvement et le droit – Essai d'une épistémologie pragmatique* (Dalloz, 2021, Méthodes du droit collection, 342 pages). The French text questioned a number of legal constructs in national, international or European contexts and the way they respond each time they are faced with "situations in movement". It was an attempt at deconstruction and reconstruction with the aim of offering a series of tools that could improve our understanding of both ordinary and complex circulation phenomena.

The pages that follow are not a literal translation of the French-language essay. Although they engage closely with it, they are the fruit of careful restructuring and adaptation.

To do this, the decision was made to focus on the more limited theme of "full movement beyond control", a central aspect of an ongoing long-term research project supported and financed by the *Institut Universitaire de France* (IUF – 'IFITIS' senior research programme – 2016–2021 – for an overview of the project and its output, see http://www.universitates.eu/jsberge/?p=25673).

Furthermore, this text, and in particular the bibliographical references, have been adapted to a more international readership.

Two overall objectives are pursued: to produce a legal essay for a wide audience addressing an extremely topical issue; and present the work in English to reflect the many exchanges to which I have contributed in that language in Europe, Brazil, Canada, the United States, Israel, Japan and Russia.

I would like to thank Dalloz for granting me authorisation for a partial translation and distribution of the text they published in French.

My thanks also to the scientific committee of the 'Confluence des droits' collection for their keen interest in this project.

I would also like to thank Dr Myles O'Byrne, a sworn translator & interpreter appointed by the court of appeal in Aix-en-Provence, for taking on the project with rigour and constructive feedback.

Finally, I offer my warmest thanks to my group of research (CNRS GREDEG), my university (Université Côte d'Azur) and the IUF, without whom this project would never have got off the ground.

It remains for me to wish you a pleasant and stimulating read!

Mas Valdarné, Evenos (Var - France), July 2021

Introduction

This legal essay is intended for a wide readership. It is the reflection of an intellectual adventure that began in 2015, as I undertook a new research project[1] which, through this publication, has now reached completion.

The initial idea was to identify a factual working hypothesis that the law had not yet identified as such. The aim was to discover or rediscover how the law is formed in the face of a "new" phenomenon.

The phenomenon in question is full movement beyond control.

This expression, which we will return to in detail (see Chapter 1), refers to the movement of goods or persons produced by humans but which escapes their control. The loss of control can be absolute in so far as it involves many—and even all—stakeholders. Examples include the release of greenhouse gases, the spread of all kinds of products and organisms, epidemic or pandemic phenomena, the dissemination of information and a certain number of scenarios linked to the movement of persons, data, capital and waste.

None of these phenomena is new.

But generally speaking, let it be clear from the outset that full movement beyond control is not at the time of writing a category of the law recognised by a majority, and is therefore not likely to have its own legal regime.

The ambition of this text is to study the law in its capacity or incapacity to accommodate a certain number of phenomena involving the total loss of control over flows.

I. The law as a domain in and of itself

In a widely accepted vision of the law known as classical positivism, an observed fact (is) does not necessarily create the law (must be); only human will can create rules of life.[2]

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1 See the mention in the foreword of the 'IFITIS' research project (IUF senior project - 2016-2021).

2 This formula is borrowed from the French law professor Georges Ripert (Les forces créatrices du droit (LGDJ, 1955 - reprint 1994), p. 73.

The philosophical distinction between what is and what must be has therefore been extensively adopted by contemporary legal scholars, whose binary vision is of the real world—what is—and the world of the law—what must be.

Although this type of analysis is defended to varying degrees and although the very existence of a given on the one hand and a construct on the other is up for debate, it is generally true of legal scholars that to them the law is their very own domain. To put it simply, it can be seen as a construct of the mind which, as such, at times circumvents general or scientific concerns about the "reality" of things.

Without directly challenging this analysis, it may be interesting to adopt another starting point: that the nature of observed facts is such that they can provoke the law.

This factual starting point is very often used in practice. Practitioners know that the essence of their work is to shape facts in such a way that they produce a particular legal effect. This "crafting" process relies on the entire legal apparatus for qualification, i.e. translating facts into law. But there is also room for work on observed facts as such, whenever they have not—or not yet—been attributed an established legal qualification, even though they are likely to play a potentially crucial role in the legal solution.

This factual starting point proves particularly useful in legal analysis when the fact in question has an all-encompassing dimension.

Such a phenomenon is all the more likely to challenge the law (the scholarly term is 'legal epistemology') if its intensity and scope are considerable.

Because it engages or is likely to engage many or all stakeholders, this particular type of all-encompassing phenomenon considerably constrains the scope of their free will.

And if the law is generally defined as an expression of will, as we have just seen, then when faced with an all-encompassing reality, one must rethink the analytical framework, even if that means going against those most widely used.

One such framework, very common in global thinking, is the relationship between circulation, security and space.

II. The relationship between circulation, security and space

In his 1978 lecture at the *Collège de France* on "Security, territory and population"[3], Michel Foucault analysed the major international trade agreements (particularly on grain) reached in the 17th and 18th centuries as a way to secure trade. At the time, they were a way for State powers to use their negotiating strengths to secure both supplies and commercial opportunities. Their objective was clearly to avoid shortages as well as bankruptcies.[4] More specifically, the purpose of such major commercial treaties at the time was primarily to secure trade.

The philosopher pursued his analysis, establishing another link between "circulation" and "space". Referring back to the early regulations on circulation (transport) in force at the time, he explained that it was the "space of circulation" that was the primary focus of the actions of the administrative "police". The objective, he said, was none other than to organise a space in which merchandise and people could move unhindered.[5]

These two successive analyses established a relationship between "circulation", "security" and "space". The use of legal tools (international agreements, national or local regulations) to tackle circulation stems from a desire to secure flows within a given space. In short, all of these constructs dealing with circulation are about creating secure spaces.

So where does that link established between "circulation", "security" and "space" stand today?

The continued engagement with Foucault's analyses of the major efforts to deal with the flow of international maritime trade and the development of routes and vehicles to facilitate circulation in the 17th and 18th centuries suggests that, now in the 21st century, we should be able to establish a close link between circulation, securitisation and spatialisation.

Whole swathes of the law dedicated to spaces of circulation are in the stranglehold of this security culture. One striking example of this is transport law, which continues to be largely fixated on the security paradigm.

A critical approach to deconstruct these analyses seems necessary. For we must be able to challenge the capacity of today's global, regional, national and local regulatory systems to maintain this link between the three concepts.

This question is all the more acute given the prospect of the total loss of control over some types of circulation.

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3 For an English version, see M. Foucault, *Security, Territory and Population*, edited by A. Davidson (Palgrave Macmillan, 2007).

4 *Op. cit.*, p. 51 et seq.

5 *Op. cit.*, p. 419 et seq.

Without wishing to undermine the relevance of the historical analyses offered by the philosopher, what follows nonetheless sets out to question this "circulation–securitisation–spatialisation" triumvirate.

This requires us to look at what the law does and does not say about the relationship between control and movement.

III. Challenging the law on the relationship between control and movement

One can explore all kinds of responses to the question of the relationship between the law, control and movement.

To begin, let's consider the relationship between the law and control.

At first glance, the law can be seen as a tool of control insofar as the greater the extent of the law, the greater the level of control.

The struggle to control illegal immigration, for example, is often used to justify legislative initiatives reintroduced at almost regular intervals and whose stated purpose is to "get a handle" on the phenomenon. This involves in particular tightening control (shorter deadlines, new conditions, intervention from new authorities, etc.). Similarly, personal data protection in Europe required the development of a model with extensive controls whose cost is the subject of much public debate. The same is true of monitoring and financial regulations: following the 2008 crisis, many systems were introduced to secure the markets, significantly reinforcing the control exercised by regulators over banks and financial institutes. In waste management, things are no different. And the fight against trafficking has at all levels (national, regional and international) justified the constant tightening of mechanisms to keep flows in check.

In all of these different domains, the language of crisis management has become routine. In the name of control, a discourse of exceptional circumstances or states of emergency is liberally used to justify new and even more restrictive regulatory initiatives. The prevailing legal context against the backdrop of the Covid-19 pandemic is a clear illustration of the way in which the law justifies tighter controls by the need to recover at least some measure of the control that has been lost.

These initial reflections are sometimes countered by another analysis which can lead to the law, in all of its developments and offshoots, being synonymous with a lower level of control. Such a scenario in the context of situations in movement is not, however, necessarily synonymous with a lower level of regulation. In other words, less control need not equate with less law.

There are several reasons for this. Two come to mind in particular. The first relates to the fact that, by definition, a lower level of control implies a process of de-legislation. In simple terms, to undo a law on control, one needs a new law! The second relates to the fact that most of the processes to liberalise controls involve the development of new legal policies intended to prevent or compensate for the risks inherent in the lesser exercise of control. This often results in new regulatory initiatives.

It is also worth noting that legal policies when it comes to control are very often subject to U-turns, big and small. The pendulum can regularly be seen to swing in many different areas. Overall, the law remains constant in the extent of its intervention, whether this entails increasing or decreasing the level of control.

Another question can be raised in relation to the law: that of the relationship between the level of control exercised and the loss of control.

One may find the response surprising: the greater the level of control, the greater the risk of losing control!

In our collective imagination, it appears to be established that the greater the level of control, the lower the risk of losing control. But the relationship between the two is far from established. The more the law puts in place control mechanisms, the more it quantitatively increases the risk of those controls failing! If in order to control a particular flow the law imposes just one check (for example a system of *ex-ante* authorisation at the source), the risk of that check being circumvented is statistically lower than if the law were to impose additional checks on the same flow (such as a series of *ex-post* checks throughout its journey).

With each check comes a certain loss of control. And so the law can accompany a process of public or private policy considerations, advocating either an increase or decrease in control. But it cannot operate under the illusion that the greater the level of control, the lower the risk of losing control. Indeed, the reverse is often true.

Let's now consider the relationship between control and movement.

An oxymoron is a rhetorical device that links two ostensibly contradictory words.

And so control and movement would appear to be in opposition with the twofold deduction that the more control there is the less movement there is, and the less control there is the more movement there is.

This liberal approach to movement and anti-liberal approach to control are somewhat rudimentary. Without being completely wrong, they fail to take into account the complex relationships between these two elements.

These relationships and their complexity have often been explored by disciplines other than law.[6]

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6 See for example: Cl. Aradau, T. Blanke, "Governing circulation: A critique of the biopolitics of security" in M. de Larrinaga, M. Doucet (eds), *Security and Global Governmentality: Globalization, Governance and the State* (Routledge, 2010). On the ERC research programme "Security Flows", conducted by Cl. Aradau, see <https://www.kcl.ac.uk/research/security-flows-1>.

Drawing on a few of the illustrations to which we will return throughout this essay, we can try to learn more about what the relationship between the law, control and movement tells us and what it does not tell us.

First, two paradoxical hypotheses must be identified:

– more movement for more control;
– less control for less movement.

When the law promotes a discourse on movement, is it not a way of introducing a dimension of control over that movement?

This analysis, brought to us by the fields of philosophy and political sociology, particularly in their historic dimension, has notably been conducted in relation to the movement of persons.

For example, scholars have tried to demonstrate that promoting the right to move freely within and between territories is generally accompanied by the affirmation of citizenship or nationality to which that freedom of movement is linked. Affirming that a citizen or national has the right to move freely cannot be understood naively as merely the expression of a liberal discourse on movement. It must also be seen as a tool of control over the beneficiaries of the right to free movement.[7] For example, saying that citizenship or nationality gives you the right to move freely at the same time means that that right is denied or is conditional for non-citizens or foreigners. It is clear from this first example that promoting free movement goes hand-in-hand with increased control over that movement.

Another example has been unpacked by scholars in relation to travel documents, passports in particular.[8] Usually seen as a tool in the service of movement, the passport has been analysed from a sociological and historical perspective as a standard document under the monopoly of the State and which gives the State a grasp on the mobility of persons, keeping it in check. And so when the law constructs rules governing passports (evocative of the current discussions about vaccine passports in the context of the Covid-19 pandemic), it is building not so much a device that facilitates movement as a tool of control.

Under another working hypothesis, one can ask whether decreasing control over movement might not, paradoxically, lead to a decrease in movement.

To understand this assertion, it should be noted that its first part refers to libertarian policy to limit measures of control, and that the second is not about an absolute decline in movement but rather in secure movement.

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7 See in particular H. Kotef, *Movement and the Ordering of Freedom – On Liberal Governances of Mobility* (Duke U. Press, 2015).

8 See in particular J. C. Torpey, *The Invention of the Passport. Surveillance, Citizenship and the State*, Cambridge U. Press, 2018).

In other words, as indicated earlier, this is simply about countering Foucault's historical analysis of the three-way relationship between movement, control and security[9] and considering the emergence of a security risk linked to movement following a decrease in the level of control exercised.

IV. An analysis in four chapters

This essay is divided into four chapters, offering a step-by-step analysis.

The first chapter raises the hypothesis that there are now circumstances of movement, or flow, involving a total loss of control. The objective is to take concrete and contemporary scenarios in which movements, albeit caused by humans and their technologies, escape our control, whether in a lasting way or for a limited time, and within perimeters varying from local to global.

The second chapter is intended as an effort to deconstruct the law on movement first of all, and secondly on control. In particular, it focuses on situations in which movement is total.

The third chapter then offers an effort to reconstruct the law in relation to the different forms of movement.

The fourth chapter sets out to re-examine a certain number of legal constructs through the prism of the total loss of control.

9 M. Foucault, *Security, Territory and Population*, *op. cit.*

Chapter 1
Total Flow Beyond Control

In 2018, there was a public exhibition in Ottawa (Canada) on the "Anthropocene".[10] Its aim was clear: to raise awareness of the extent of the transformations underway on Earth, reflected in scientific theories at the beginning of the 21st century asserting the advent of a new geological era —the Anthropocene—to succeed the Holocene, which had lasted more than 10,000 years.

The first exhibit visitors encountered was a video loop of a long take filmed from the front of a train speeding through the longest tunnel in the world (Gotthard Base Tunnel in Switzerland, 57.1 km long).

It is interesting that the Anthropocene should be symbolised this way using a situation in movement generated by human technology. This helps us to understand the scale of the changes caused to our environment by the circulation flows stemming from the technosphere.

As a legal scholar, it may of course seem difficult to adopt the concept of the Anthropocene, often subject to debate.[11] It may even be characterized as mere jargon, no more than a passing fad.

But it is also possible to overcome such scepticism[12] by focusing on the impact in the legal world that the distinction between the Holocene and Anthropocene has on another distinction—that between movements with human origins and movements of the natural world.

I. Movements with human vs natural origins

Let's begin with the assumption that on the one hand there are the movements of the technosphere, and on the other those of the lithosphere, atmosphere, hydrosphere and biosphere.

A distinction between anthropogenic and natural movements. The term *technosphere* has been discussed by scientists for more than 50 years.[13] It refers to all of the technologies produced by humans since the origins of humanity, leaving a trace of trillions of tonnes on the planet over the course of its development (estimate generated in 2017).

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10 See the exhibition catalogue: E. Burtynsky, J. Baichwal, N. de Pencier, *Anthropocene* (Ago, 2018).

11 For a critical analysis of approaches to the Anthropocene from an outdated vision of the planet: C. Simonetti, "The Petrified Anthropocene", *Theory, Culture & Society*, vol. 36, 7-8 (2019), 45.

12 Among the first legal perspectives of the Anthropocene, see L. Kotzé (ed.), *Environmental Law and Governance for the Anthropocene* (Bloomsbury, 2016); E. Biber, "Law in the Anthropocene Epoch", *Georgetown Law Journal*, vol. 106, 1 (2017), 3.

13 See in particular: P.K. Haff, "Technology as a geological phenomenon: Implications for human well-being", *Geological Society London Special Publications*, vol. 395,1 (2014), 301; J. Zalasiewicz et al., "Scale and diversity of the physical technosphere: A geological perspective", *The Anthropocene Review*, vol. 4,1 (2017), 9; D. Orlov, *Shrinking the Technosphere* (New Society Publishers, 2016).

This holistic approach to technology places at the forefront of its outputs all the tools of communication, transport and interconnection imagined and designed by humans.

If one accepts such a reading of human technology and the major impact it has on movement, then one will recognise that a not inconsiderable proportion of the situations in movement that can be observed around us today can be traced back to human technology, i.e. the technosphere.

Such movement can be distinguished from those generated by the natural world. The lithosphere (landslides, plate tectonics, volcanic eruptions), atmosphere (moving mass of air), hydrosphere (moving mass of water) and biosphere (movements within or between ecosystems) provoke their own displacements of inert or living matter, air or water in which man's actions would not appear to play a crucial role.

For a legal scholar, it is interesting to point out that the different origins of these flows can have significant consequences for the constructs of the law.

The consequences of this distinction in law. In strictly legal terms, the law can be seen sometimes to distinguish between natural movements and those caused by humans. This is true, for example, of the way we manage disasters.

The law generally distinguishes between the natural or technological causes of disasters, which are of interest in the context of situations in movement whenever they involve some kind of circulation: landslides, flooding, contagion, spread, pollution, etc.

Let's consider three examples in French law of the different approaches to natural and technological disasters.

During the French Revolution, the general term *public calamity* was a novel way to refer to two very different types of events: those for which "people [...] can only accuse the heavens of the ills they suffer" and all others.[14]

The current legislation in France clearly distinguishes between a declaration of "a state of natural catastrophe" (law of 1982) and one following "a state of technological catastrophe" (law of 2003).

Book V of France's Environment Code, which focuses on the "prevention of pollution, risks and nuisance", the prevention of "natural risks" (section VI) is clearly distinguished from other risks linked to human activities, such as those inherent in chemical products (section II), genetically modified organisms (section III), waste (section IV), certain structures or facilities (section V), noise (section VII) or nuclear facilities (section IX).

14 Quoted by Ch. Cans (ed.), *Traité des risques naturels* (Le Moniteur, 2014), p. 92.

The legal solutions applicable to these two families of risk can present certain similarities. But it is interesting to note that the law generally distinguishes between the natural and anthropogenic origins of risk.

II. General and abstract hypothesis of total movement beyond control

Each of the three terms here—*total*, *movement* and *beyond control*—needs to be defined in turn.

Total. This term derives from the expression "total social fact" as it is used in sociology. It refers to the property of movement that concerns all parties. Concluding his much celebrated *The Gift*, Marcel Mauss[15] offered this definition: "The facts we have studied are all 'total' social phenomena. The word 'general' may be preferred although we like it less. Some of the facts presented concern the whole of society and its institutions [...]; others [...] are the concern of individuals and embrace a large number of institutions".[16]

"Total movement beyond control" describes a multifaceted whole comprising instances of movement which, in a given environment, can concern all of us, or at least a great many of us.

Total movement beyond control can be found in any kind of environment. From a spatial perspective, it could relate to one or more rooms (meeting room, dwelling), a broader entity (premises of a company or administration), a given geographic zone with more or less clear boundaries (town/city, county, region, State, market, contamination zone) or, even broader still, an entire environment (Earth, universe).

From a temporal perspective, total movement beyond control can take place in an extremely short timeframe (occurrences measured in nanoseconds) or over an extremely long period (geological era).

From a social perspective, total movement beyond control can affect all kinds of groups, from the smallest to the biggest (family, clan, association, civil or commercial society, national, regional, international or transnational companies).

All of these distinctions must be approached dynamically, for one specific feature of movement—and herein lies the difficulty of pinning it down—is that it can very quickly pass from one state to another. And so we cannot adopt a compartmentalised vision of these spatial, temporal and social environments.

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15 M. Mauss, *The Gift: Forms and Functions of Exchange in Archaic Societies* (Martino Fine Books, 2011 - original version in French, 1925).

16 *Op. cit.*, p. 76.

The nature of phenomena involving total movement beyond control is that they necessarily extend beyond the framework of action of a given operator, who one might be tempted to think allowed the movement to slip out of its grasp. They concern all types of stakeholders:

- active or passive stakeholders, those who generated the movement that subsequently slipped beyond control or those who suffer it;
- public or private stakeholders, from the State and its tentacular entities to international or regional public bodies and all kinds of private non-governmental organizations, not forgetting individuals of course;
- legitimate or illegitimate stakeholders: total movement beyond control can be part of lawful transactions that comply with the rules, which give them legitimacy, or unlawful transactions such as trafficking, whether organised or not.

In any case, it is essential to develop a dynamic approach to the interplay between all of these stakeholders. Movement creates porousness between these categories, such that when it is total and beyond control, it is very difficult to pin down the phenomenon as active, passive, public, private, legitimate or illegitimate.[17]

Movement. The types of movement addressed in this essay refer to any geophysical displacement of persons and things, in both material and immaterial forms. The words persons and things are to be understood in the broadest sense: natural persons or legal entities, items or things of value, the latter including services and capital. By "geophysical displacement", I am referring to all movements involving persons or things being displaced across one or more territories, either within a given space or across several different spaces.

I have decided to exclude two types of movement.

First, those of the natural world. This is because the notion of control is not the same whether we are talking about movements with natural or human origins. In very general terms, it can be said that the law does not require humans to control the movements of the natural world, whereas the reverse approach is usually adopted in the case of movements caused by man. To the extent that our working hypothesis is based on the idea of the loss of control (see below for further explanations), it is only logical for us to address this latter category exclusively.

This distinction between the two types of movement—caused by nature or by humans—must not however be pushed too far. An increasing number of phenomena considered natural are now described as a more or less direct consequence of human activity. This requires us to consider the

17 For a remarkable illustration of this porousness between actors and territories, see J.-B. Malet, *L'empire de l'or rouge – Enquête mondiale sur la tomate d'industrie* (Fayard, 2017). The book has been adapted into a documentary movie (in English and French): *The Empire of Red Gold*, by Xavier Deleu & Jean-Baptiste Malet (2017), distributed by Passion River, www.passionriver.com.

question of the link between human activity and natural occurrences and also to observe the way in which the blurring of these two types of phenomena feeds into the legal debate.

The second exclusion relates to forms of legal circulation with a metaphysical dimension. The movement of legal models, concepts and cultures does not fall under the scope of this text, except where a correlation can be found with geophysical movement. They are underpinned by different approaches and, incidentally, have received far greater attention from legal scholars and theorists than their geophysical counterparts.[18]

Beyond control. Human movements owe much to our technology and the technosphere referred to earlier.

We have seen powerful demonstrations[19] of how difficult it is to conceive of and therefore control technological objects when they cannot be described using simple words, which one must admit is very often the case.

There is no shortage of reasons to adopt a specific approach to flows with anthropogenic origins, as distinct from our usual approach to natural flows.

These flows become "uncontrollable" insofar as, whether in general or specific, definitive or temporary situations (particularly in times of crisis), at some point, in part or in full, they escape the control of the stakeholders concerned.

This escape may be voluntary or involuntary, conscious or unconscious.

What is important at this stage is to consider the effects of this loss of control. Total movement beyond control, within its own sphere, generates positive and negative, legal and illegal circuits that prevent even the concerted efforts of stakeholders from containing it.

Rather than talking of a lack of control, it is preferable to approach this in terms of a "loss of control". At some point humans had control over the process, but due to a given cause or succession of causes, control over the movement, or flow, was lost by all of the stakeholders potentially concerned.

The situation is not necessarily irrevocable. But for a time, it is out of control or, more specifically, beyond control.

The hypothesis of a loss of control requires agreement on the meaning of the word *control*. Without wishing to anticipate the different analyses—legal in particular—of the notion of control, at this stage it is important to understand that it can have several meanings.

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18 See selected bibliography at the end of the book.

19 H. Arendt, *The Human Condition* (University of Chicago Press, Second ed., 1998 – original version: 1958), p. 3.

Control may refer to:

- measuring movement: collecting data on circulation is one way to control it; data is indispensable when it comes to creating a circulation model that can make it intelligible;
- releasing movement: release is obviously a form of control, since the stakeholder with the power to initiate movement can simply decide not to do so;
- orienting movement: deciding to steer a flow in one direction rather than another is another form of control; choosing one circuit over another has consequences;
- stopping movement: this is the flipside of releasing movement; being able to stop the flow that one has set in motion or that was set in motion by another is clearly an exercise of control;
- reversing movement: the ability to make flows completely reversible is no doubt the most comprehensive expression of control as it involves forms other than those mentioned above (measuring, releasing, orienting and stopping).

The hypothesis of total movement beyond control does not necessarily involve the cumulative loss of all of these tools of control. One can see how the loss of control can occur gradually and relate to only some of these tools. One could equally see how the loss of control can be total insofar as no stakeholder is in a position to measure, release, orient, stop or reverse the flows in question.

III. Some iconic cases of total movement beyond control

To illustrate what we mean by "total movement beyond control", we will now consider four examples that are particularly symptomatic of the current era: the circulation of greenhouse gases, information, epidemics and invasive exotic species.

We will then broaden our perspective to a more all-encompassing approach.

Circulation of greenhouse gases. On a global scale, greenhouse gases are a major example of how control can be comprehensively lost. Human activities lead to gas emissions (carbon dioxide and other greenhouse gases) which, once released into the atmosphere, escape our control. These gases accumulate and circulate all around the planet, without those responsible for their release having any means to recover them. Indeed, the action of the stakeholders concerned amounts to, first of all, waiting a very long time for the existing gases to dissipate, and secondly, trying to reduce past and future emissions. This is the famous "negative emissions" theory promoted by geo-engineering. But even the latter efforts remain highly limited. It is not enough for one country, company or individual to be exemplary in terms of the reduction or remission of emissions. All stakeholders need to mobilise in the same direction if human intervention is to have the intended global effects, i.e. control over the quantity of greenhouse gases circulating in our atmosphere. Such a level of mobilisation is not in place, either in discourse or in action.

On an individual scale, the situation is no different. X drives a car with a combustion engine. The gases emitted by the vehicle are testimony to the loss of control on various levels. When it comes to calculating emissions, recent press coverage showed us that major automobile manufacturers had skewed their analyses, deceiving thousands of consumers about their capacity to limit their vehicles' emissions by choosing one model over another. So when it comes to gas emissions as such, X has no other choice but to emit or decide to no longer use a car. The latter choice gives her the power to stop the flow, although it implies definitively abandoning the vehicle's intended usage. X has no capacity to orient the flow of the exhaust fumes her car spits out. The process is irreversible to the extent that even if X plants new trees in her garden every year, nothing allows her to believe that she is in a position to recapture the gases she has herself emitted and which are potentially the cause of problems thousands of kilometres away.

Circulation of information. The activity of communicating information necessarily involves the circulation of pronouncements and in particular raises the difficulty of "false information" being disseminated.

One need hardly be a specialist in information science to observe that the development of social media online and the technological devices now available to us all to participate in communication process has led to the emergence of a considerable number of new stakeholders on the margins of the traditional media. This totally undermines the communication process and feeds into diverse utopias (in the pejorative sense) in our so-called "information society". N. Luhmann[20] explained that the intervention of a technical dimension rules out harmonious interaction between the communicator and recipients. The possibility for any given individual to communicate information via the Internet considerably increases the difficulty of determining the circle of persons involved in a communication exchange.

These difficulties clearly reflect the hypothesis of total movement beyond control laid out above. When just about anyone is in a position to make information accessible to the greatest number, it is very much impossible to have any real control over (measure, release, orient, stop or reverse) its circulation.

Circulation of epidemics/pandemics. The global paralysis caused by the spread of the Covid-19 coronavirus in late 2019 and early 2020 is the third example of total movement produced by humans and which largely escapes our control.

The anthropogenic origins of the Covid-19 epidemic are no longer really in doubt, even though the precise scenario of the virus's first transmission to a human continues to be debated. Human activity, and the way it changes ecosystems (e.g. mass deforestation), is behind the spread of the virus, which, without such disturbance, would almost certainly have remained confined to its natural environment.

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20 N. Luhmann, *The Reality of Mass Media* (Polity Press, 2000 - original version in German, 2004).

The circulation of the virus on a global scale—a pandemic—is also closely linked to human activity. Person-to-person transmission is generously facilitated by all of our movements, whether on a small or large scale. Other favourable vectors such as the circulation of polluting micro-particles place us, as individuals, very close indeed to the propagation process.

This propagation is clearly out of control. At each turn, public and private stakeholders are increasingly aware of this unstoppable loss of control. First, they try to isolate cases, then put entire swathes of the population into lockdown and, ultimately, realise that the pandemic is sweeping the world like a gigantic wave that no-one can stop. All efforts then turn to minimising its devastating effects, and those who speak—in earnest—of "stopping" it are fewer and fewer in number.

Circulation of invasive exotic species. The final example is that of the circulation of plant or animal species which come from elsewhere ("exotic") and massively colonise their host environment. Seen as one of the five key factors in the collapse of biodiversity (alongside damage to natural habitats, climate change, over-exploitation of species and pollution), this phenomenon is openly described as the manifestation of a loss of control over movement that is closely linked to the actions of humans, who artificially introduce species outside of their natural environment and are then unable to control their spread. It is said to have increased considerably over the last 50 years.

Broader approaches: persons, data, capital, waste. To pursue this analysis, a broader approach to phenomena of total movement beyond control in several vast areas of human activity is needed.

This is a difficult but necessary choice.

The difficulty lies essentially in the analyst's capacity to work outside of her comfort zone and be willing to test her frameworks of analysis in very different environments, each one more demanding than the next. No-one is omniscient and it is very hard to develop a universal knowledge of the law. One must therefore be ready to tackle distinct areas not as a specialist, but as a generalist trying to apply the same questions to diverse domains.

This approach is necessary. Each area of human activity has its own structure, constraints and ways of seeing things. In each of the subjects we will be looking at, there is a specialized and abundant body of doctrine that has naturally looked at the questions raised by movement and control thereof. It is only natural to refer to these doctrines.

But if one wishes to offer even a slightly different perspective to those accustomed to working on a particular topic—which after all is the aim of any research—, it is essential to define a new research focus. This is why I took the decision to adopt a broader, cross-disciplinary approach which will allow us to explore whether or not, beyond the specificities of each area, there is a common way of describing and reflecting on the topic of this essay.

To identify the major areas of human activity that can contribute to our reflection on phenomena of total movement beyond control, I chose different fields of study of which movement is an intrinsic part. We are talking about things that circulate, i.e. circulation is part of their very definition:

- persons (natural persons or legal entities), who are intrinsically destined to move or be deployed;
- data, which is only of any real use if it is exchanged within some kind of circuit, from the smallest to the largest;
- capital, whose primary driver of value is circulation;
- waste, which implies an act of abandonment or defection, i.e. the movement of the thing abandoned or the movement of the person walking away from it.

These different categories can be linked. For example, the displacement of persons, capital or waste can produce data which in turn circulates. In other cases, it may seem totally inappropriate to connect them: people and waste are, after all, different in every respect!

To present these categories—persons, data, capital and waste—we will adopt the same reading, distinguishing in turn between the casuistic and dogmatic (in the positive sense) approaches. The former involve presenting tangible scenarios of total movement beyond control, while the latter seek a more general understanding, establishing a typology of the different forms of movement in question.

IV. Total movement of persons beyond control

Let's begin with the casuistic approach (A) before turning to the dogmatic approach (B).

A. Some examples of total movement of persons beyond control

As we all know, people have a natural capacity to move, i.e. to deploy themselves through movement across territories and spaces. In some cases, their movement involves a total loss of control. We will consider four significant examples.

The endless search for an elsewhere that does not exist: the case of "stateless" persons. When it comes to the movement of persons, the loss of control can stem from the Kafkaesque situation in which people find themselves when no State is willing to host them. They may be stateless because they are without nationality, in which case they are afforded limited international protection (inferior to that given to refugees). Or they may be stateless de facto, in a situation where no country is willing to take them in or their home country has turned them away. Complex systems can be at work in such a scenario. This is true of situations where a State or group of States decide to outsource the processing of asylum requests to third countries, encouraging the creation of transit zones, or "hotspots". Foreign nationals find themselves unable to access, even temporarily, the territory in which they are seeking protection, and their circumstances are usually precarious in the transit country. Specialists say that this stateless status is the reality for more than 10 million people globally.

The scale of the phenomenon is due to the great shifts that have taken place in the world. At a time when land was not tamed as it is today, the search for an elsewhere was still potentially worth it. The decision for an individual or group of individuals to flee could lead them to an "unknown" or "new" land. This is practically unthinkable nowadays. With essentially all of the planet's land now conquered by man, stateless persons can be expelled from one territory to the next and so on. The endless search for an elsewhere that does not exist indicates a total loss of control over this process of movement.[21]

Overseas surrogacy movements. Movement is an omnipresent feature of overseas surrogacy, where the parents-to-be (the clients) look for the services of a surrogate mother (service provider) abroad to carry a child they then wish to repatriate under their roof after his or her birth.

This is a highly multifaceted form of movement: movement of the parents-to-be, the surrogate mother, the gametes, the child, the medical certificate, the birth certificate, the court decision authorising the adoption, etc.

A multidisciplinary and comparative research study[22] has shown how these movement phenomena lead to the neutralisation of, i.e. a loss of control over, a certain number of legal regulatory mechanisms, irrespective of the legal environment in question (one that authorises or, on the contrary, prohibits surrogacy, one with a *laissez-faire* approach or, on the contrary, one that organises the entire procedure from start to finish).

In particular, the fact that the child born through surrogacy can move from the country of their gestation/birth to that of the parents-to-be raises questions about the status of that child, which the host country could hardly claim not to know simply because the procreation process is considered unlawful or non-compliant on its national soil. It is absolutely impossible to overlook this movement phenomenon. Indeed, we need to tackle it for the total fact of movement it is, observe the disorganisation it can cause to the legal order and consider how and whether to rethink this order in light of the phenomenon.

Residency permits and "golden" passports. The "golden visa" practice is whereby a country sells a residency permit or even a passport to foreign nationals with the capacity to pay the highest price (in cash and/or in the form of investments) to obtain a permit to access its national soil as well as various other foreign territories. Several countries worldwide have experimented with this practice (Canada, United States, Australia, Singapore and Malaysia), including in Europe (United Kingdom,

21 On this topic, see in particular: M. Foster, H. Lambert, *International Refugee Law and the Protection of Stateless Persons* (Oxford University Press, 2019).

22 Legal and Sociological Analysis of the French Context considering Foreign Practices Related to Filiation of Children conceived through Surrogacy Abroad (United Kingdom, Belgium, Israel) – Edited by M.-A. Hermitte, K. Parizer, S. Mathieu, J.-S. Bergé (Mission de recherche Droit et Justice, Paris, 2017), 286 p. - available in French: <http://www.gip-recherche-justice.fr/publication/analyse-juridique-et-sociologique-de-letat-des-questions-en-france-a-la-lumiere-des-pratiques-etrangeres-en-matiere-de-filiation-des-enfants-concus-hors-la-loi-belgique-grande-bretagne-israel/>.

Switzerland, Latvia, Portugal, Greece, Spain, Hungary, Malta and others). The studies available show that it is a practice of particular interest to high-net-worth individuals from China, Russia and the US.

The case of European countries that belong to the Schengen Area, which has adopted the free movement of persons without internal checks (26 countries some of which, like Switzerland, do not belong to the European Union), is an example of total movement beyond control. When a State like Malta offers to sell a Maltese passport or residency permit in exchange for significant investment, it is not only Maltese citizenship or residency that is at stake, but also European citizenship (passport) or residency (visa). The other member States in the Schengen Area are faced with a total fact of movement that can clearly be seen as a loss of control over the flow of persons from third countries.[23]

The mobility of companies. The mobility of companies is not organised on an international scale. Rather, States engage in normative competition in an effort to attract foreign investments without necessarily trying to coordinate their respective actions.

On a regional scale, particularly in Europe (European Union), this lack of coordination is also striking. Previous attempts to establish shared rules have failed, and ongoing efforts are proving particularly laborious.

It is in this European context of non-harmonisation that the Court of Justice of the European Union has tried to find solutions based on a fundamental freedom of movement (primarily the freedom of establishment, and in some cases the free movement of capital).

The case law this has generated is often understood as an expression of a desire by European judges to impose the mobility of companies since States have been unable to organise it in the absence of shared will.

The movement of companies is thereby imposed on all stakeholders in the name of respecting a fundamental principle of free movement but which does not provide all of the necessary tools (fiscal and social in particular)—far from it—to accompany this type of process.[24]

B. A typology of the total movement of persons beyond control

From the dogmatic perspective, it is interesting to observe the place that the hypothesis of total movement of persons beyond control could occupy in the different types of far-reaching mobility, understood in its broadest sense. Without trying to be exhaustive, four examples are considered here.

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23 For a brief overview of the practice, see J. R. Short, "The other immigrants: how the super-rich skirt quotas and closed borders", <https://Theconversation.com> (Global Edition), September 2015.

24 For a comparative approach to the phenomenon, see G. Shen, *Regulating of Cross-border Establishment in China and the EU – A Comparative Law and Economics Approach* (Intersentia Metro, 2016).

International mobility. International mobility has been around a very long time. For example, in the Middle Ages it has been shown that, even after the invasions of the 10th century ended, the mobility of persons continued in renewed forms.[25]

In the contemporary period, it relates to all of the systems devised around the world to tackle the question of protecting refugees and the phenomenon of migration. The legal landscape was significantly amended in the aftermath of World War II, in particular with the adoption of the United Nations Convention Relating to the Status of Refugees (1951). This system has undergone major transformations in recent years, particularly with the rise in power of the tools of international humanitarian law, and it can now be said to be in a state of veritable crisis.

In December 2018, the Global Compact for Safe, Orderly and Regular Migration was adopted by 152 countries at a conference organised by the UN in Marrakesh attended by 165 States.

The initiative, which led to a non-binding text, was the subject of global controversy and the target of a broad campaign of disinformation. It ended up being defended primarily by the same people who had criticized its lack of ambition.

In short, the spectre of total migration beyond control took over the debate, relegating to the background the efforts made to define the tools of good governance for borders and mobile populations.[26]

Citizen mobility. Europe, and specifically the European Union, has achieved great heights with its ambition for the free movement of persons, whether economic agents (workers and entrepreneurs) or European citizens generally.

Research, mainly in law and political science, has focused on determining whether this European ambition of mobility has achieved its objectives.

Two major issues have been studied in relation to total movement beyond control. The first relates to internal migration within Europe immediately after the Union's major enlargement to include Central and Eastern Europe (2004). The second is the efficacy of free movement of persons for European citizens in general.

On the first point, we know that the EU increased the number of derogations to avoid the risk of mass emigration feared by a certain number of States. The consequence of this decision was to bring about a regression in some freedoms of movement, particularly that of employees.

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25 Société des historiens médiévistes de l'Enseignement supérieur public (ed.), *Des sociétés en mouvements – Migrations et mobilité au Moyen Age* (Publications de la Sorbonne, 2010).

26 For a critical perspective of the European management of the 2015 crisis in light of the Pact, see J.-Y. Carlier, F. Crépeau, A. Purkey. "From the 2015 European 'Migration Crisis' to the 2018 Global Compact for Migration: A Political Transition Short on Legal Standards", *McGill International Journal of Sustainable Development Law and Policy*, vol. 16,1 (2020), 37.

On the second point, an increasing number of criticisms have been made about the poor results obtained in terms of intra-European mobility. The percentage of Europe's population who effectively benefit from the free movement of persons is considered too low.

These two subjects of analysis are interesting for our working hypothesis. They show that the loss of control does not necessarily refer to an inability to curtail undesired population movements. This loss of control can also reflect very real difficulties in organising the mobility of persons in a shared space that comprises several national territories. In the first case mentioned above, the loss of control resulted in a regression in the freedom of movement. In the second, it manifests itself through an inability to deploy personal mobility across the European area.[27]

Vulnerable mobility. Any specialist will tell you: when it is forced or altered, mobility affects the vulnerable in particular, as well as giving rise to new forms of vulnerability. Whether foreigners, women, children, those who are incapacitated or in need, mobility feeds off and exacerbates forms of vulnerability. One need only look at the different types of trafficking (human trafficking, illegal migration), which systematically exploit these states of vulnerability.

By looking at the total loss of control of those who, in positions of vulnerability, are not free to choose their own mobility, we can get an idea of the scale of a phenomenon which our societies generally try to ignore. In other words, to talk of vulnerable mobility is to talk of a total loss of control over mobility. Refusing to consider this reality amounts to nothing less than refusing to consider the situation of vulnerability in which those concerned find themselves.

Here, the loss of control is inherent in the notion of "vulnerable mobility" itself. The two are linked.[28]

Climate mobility. An increasing number of research studies have tried to sketch out possible scenarios for the measures we need to take to cope with climate-driven population displacements. This is not theoretical work: in some regions of the world (Pacific, south-east Asia), such displacements are very much a reality.

Various initiatives, legal initiatives in particular, are being taken in an attempt to identify suitable solutions to the different problems raised. One such solution would involve recognising the status "environmental displaced person", which would be offered protection potentially equivalent to that afforded—in principle—to refugees.

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27 For a critical analysis of mobility in Europe, see in particular: E. Recchi, *Mobile Europe – The Theory and Practice of Free Movement in the EU* (Palgrave Macmillan, 2015).

28 For a legal analysis of forced mobility, see J. Ruiz de Santiago, "Aspects juridiques des mouvements forcés de personnes", Collected Courses of the Hague Academy of International Law, vol. 393 (2018), 313.

But it is clear that the prospect of tens of millions of people being displaced between now and 2050 has petrified international political action, already bogged down in a state of dire confusion (especially between migrants and refugees).

In some, it is the spectre of total loss of control that governs![29]

V. Total movement of data beyond control

Let's begin again with the casuistic approach (A) before turning to the dogmatic approach (B).

A. Some examples of total movement of data beyond control

Like people, data has a natural propensity to circulate. Here are three illustrations of its total movement beyond control.

Making data available on a website. Imagine a blogger posts something and inadvertently (an unfortunate copy-and-paste) includes the name and telephone number of an acquaintance. Within a potentially very short timeframe, that information is relayed by various social media platforms to which the blogger is subscribed and the page is indexed by various search engines. It is now accessible anywhere the website can be visited. Realising her error, the blogger takes down the indiscreet content within minutes of its publication. But has she removed the data in question from the Internet? The answer is most certainly no. Within just a few minutes, servers, which is to say computers, were able to consult the website and store the information it displayed. Because the Internet's memory cannot be erased, one cannot completely remove content—even less so control its circulation. Of course, the data in question will be less and less visible because it is the modified post that will be consulted and indexed, but a detailed search may be able to recover it.

This illustration of a perfectly banal scenario gives us some idea of the extent to which control has been lost.

Transatlantic personal data transfers. When it comes to the transatlantic transfer (between the EU and the US) of personal data, the legal solutions have varied. Without going into the details here, the reader is reminded of the following events:

– transatlantic personal data transfers were authorised in 2000 by the European Union Commission under the "safe harbor" principles[30];

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29 On this theme of climate mobility, see in particular: B. Mayer, *The Concept of Climate Migration – Advocacy and its prospects* (Edward Elgar, 2016).

30 Commission Decision of 26 July 2000 pursuant to Directive 95/46/EC of the European Parliament and of the Council on the adequacy of the protection provided by the safe harbour privacy principles and related frequently asked questions issued by the US Department of Commerce (notified under document number C(2000) 2441).

- this decision was overturned in 2015 by the European Court of Justice[31];
- a new framework known as the "privacy shield" was established to replace the previous system in 2016[32];
- this framework was in turn largely annulled by the ECJ in 2020[33];
- against the backdrop of measures taken in France to tackle the Covid-19 epidemic, the system for collecting health data was modified in 2020[34]; this text was amended the same year mainly in light of the Schrems II ruling, with the following stipulation: "No personal data may be transferred outside the European Union".[35]

In response to the question whether these legal changes have had any real impact on transatlantic data exchanges, it is clearly very difficult to measure with any amount of accuracy the quantity of data flows circulating between the two continents in the period concerned.

Transatlantic personal data transfers are out of control simply because no-one is in a position to say whether or not the changes made to the regulations have had a significant impact. Here, the loss of control is above all reflected in our inability to measure, or monitor, data transfers.

But that's not all.

We can safely assume (although not demonstrate, since we have just seen that accurate measurements are impossible) that between 6 October 2015 (Schrems I ruling) and 12 July 2016 (new decision by the Commission) or since 16 July 2020 (Schrems II ruling), the transatlantic circulation of personal data did not see a sharp decline! Data exchanges are essential to the running of most global activities, and they will naturally continue to take place irrespective of legal vicissitudes.

That which applies to data generally is also true of health data. Efforts will naturally be made to avoid being caught transferring data outside the European Union, but it would be very naive indeed to think that a mere order is likely to stop the flow of data in its tracks.[36]

Data theft, leaks and trade. In the world of data circulation phenomena likely to escape the control of all stakeholders, or at least a great many of them, cases of data theft, leaks and uncontrolled trade are legion.

Not a week goes by without a new case being reported in the media.

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31 ECJ, GC, 6 October 2015, C-362/14, Schrems I.

32 Commission Implementing Decision (EU) 2016/1250 of 12 July 2016 pursuant to Directive 95/46/EC of the European Parliament and of the Council on the adequacy of the protection provided by the EU-US Privacy Shield (notified under document C(2016) 4176).

33 ECJ, GC, 16 July 2020, C311-18, Schrems II.

34 Order of 10 July 2020 prescribing the general measures necessary to deal with the covid-19 epidemic in the territories that have emerged from the state of health emergency and in those where it has been extended, Article 30.

35 Order of 9 October 2020.

36 For a theoretical and practical analysis of international data flows, see W. Kuan Hon, *Data Localization, Law and Policy – The EU Data Protection, International Transfers Restriction, Through a Cloud Computing Lens* (Edward Elgar, 2017).

First, there is piracy. Some very large firms have been the target of data theft in recent years, including Equifax, Yahoo, Facebook, Uber, eBay, Home Depot, FedEx, JP Morgan Chase and Marriott International.[37]

Next, there is the phenomenon of data leaked by someone on the inside of a data collection entity. The biggest cases are well known: Wikileaks, Luxleaks, Panama Papers, Pantagon Papers, etc. Those behind such leaks take considerable risks, and the whistleblower status was developed in an effort to protect them.[38]

And finally, data trade. It has been revealed that States (Denmark is one example; see the *Guardian*, 1 Oct. 2016) have purchased data generated through theft or leaks to bolster their fight against tax evasion. Another form of trade involves data brokers who purchase enormous quantities of data, for example geolocation data to sell it on to interested parties, perhaps for targeted marketing campaigns. This is widely denounced for its lack of transparency. There has also been widespread criticism of surveillance capitalism, driven by the systematic profiling on a very large scale of our behaviour online for commercial purposes.[39]

One case alone—the Cambridge Analytica affair—clearly reflects the close intertwinement between all these forms of circulation, whether provoked or subdued, public or private, legal or illegal. More than 2 billion Facebook users saw their data transferred to a third party, 87 million users were targeted based on that data during the US election campaign in 2016, and the CEO of the (in)famous social media firm was forced to publicly apologise to various national or international public authorities as well as his users.[40]

These few examples—and there are many more—show that the uncontrolled circulation of data, seen as a total fact of movement, is a recurring reality.

B. A typology of the total movement of data beyond control

Looking at some of the main types of data circulation, we can consider how they are linked to the analytical perspective of the total loss of control. Four types will be addressed here, each closely intertwined with the next.

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37 On the presentation of the latter case, where the intrusion of hackers into the company's computer systems has been continuous for four years, resulting in the misappropriation of personal information of no fewer than 500 million customers, see B. Venard "Marriott data breach: 500 million times concerned, <https://Theconversation.com> (Global Edition), January 2019.

38 See in particular on this topic, A. Savage, *Leaks, Whistleblowing and the Public Interest – The Law of Unauthorised Disclosures* (Edward Elgar, 2016).

39 See S. Zuboff, *The Age of Surveillance Capitalism – The Fight for a Human Future at the New Frontier of Power* (Profile Books, 2019).

40 On this case, see in particular J. Inglis, "Understanding Facebook's data crisis: 5 essential reads", <https://Theconversation.com> (US Edition), April 2018.

Mass circulation. When it comes to data, mass circulation is a reality that can be increasingly observed. Looking at the manifestations of circulation driven by huge volumes of data, one wonders whether this mass phenomenon will not exacerbate the loss of control seen in the circulation of individual items.

This category can be said to have two sub-entries.

The first relates to the formation of a database. Consider this example: in October 2016, a State decree was published in France establishing a file known as TES (literally "secure electronic titles"). Its publication immediately triggered responses on social media and in the news. Pointing to the excessive risk of concentrating data in this way in the event that pirates managed to infiltrate the database or in the event of massive leaks, people spoke out to suggest alternative and less risky models. Here, the notion of a "mass of data" is immediately correlated with the "total loss of control over data circulation".

The second sub-entry relates to what is commonly known as big data. The metaphor of a continuous flow is often used to describe the deluge of data that now feeds into all activities linked to our information society. What is remarkable once again is that the loss of control over this circulation is immediately associated with a mass phenomenon (big data). For who could claim to have control over flows on such a large scale? Although there have been attempts, for example, to better sort data and thereby avoid the risks of information pollution, the reality is that such attempts in turn generate a considerable mass of data in addition to the rest, thus effectively evading the problem or postponing its resolution. One mass breeds another and the prospect of a total loss of control inevitably grows.[41]

Shared circulation. Data-sharing has become a large-scale phenomenon and necessarily one that involves circulation. To share is to circulate!

This phenomenon can be observed on all scales.

At the individual level, nowadays we are systematically invited to share our data across the various tools at our disposal, in particular applications to be used on mobile phones. The data in your address book is shared with your diary, which is in turn shared with a search engine. Data thereby circulates from application to application with all of the risks that implies in terms of total loss of control.

On a larger scale, data-sharing is justified by public policies to combat fraud (e.g. taxation, social benefits) or streamlining (e.g. urban mobility). The development of shared information systems does not only affect the State or local area; it can also be observed at a European level. Obvious examples

41 For a transversal legal approach to the big data phenomenon, see Fl. G'Sell (ed.), *Le big data et le droit* (Dalloz, 2020); J. Cannataci, V. Falce, O. Pollicino, *Legal Challenges of Big Data* (Edward Elgar, 2020). For an analysis of big data in terms of ownership in the context of European Union law, see A. Strowel, "Big Data and Data Appropriation in the EU", in T. Aplin (ed.), *Research Handbook on Intellectual Property and Digital Technologies* (Edward Elgar, 2020), p. 107.

of this are the continent's dedicated systems for freedom, security and justice (Schengen information system, visa information system, etc.). A European agency was even set up for the operational oversight of large-scale information systems (eu-LISA). All these instances of data-sharing are driving the increase in circulation. And there is nothing to suggest that this process is reversible. Indeed, everything suggests that it will inevitably increase the risk of a total loss of control.

On an even bigger—planetary—scale, the expansion and concentration of firms we are seeing all around the world is increasingly justified by a desire to share data (e.g. the buyout of WhatsApp by Facebook). Yet, as we have seen, these Internet behemoths are no more immune to total loss of control scenarios than more modest stakeholders.

Free circulation. Whether data is protected or not, the paradigm of free circulation is omnipresent.

This is particularly true of the EU, which has made free movement one of the founding principles of its system.

And so:

– for personal data: Regulation (EU) 2016/679[42], known as the GDPR, identifies "free movement" as one of its central objectives (as well as being mentioned in the title, see also Art. 1);
– for non-personal data: Regulation (EU) 2018/1807[43] establishes a framework applicable to the "free flow" of data.

This convergence of viewpoints on the "free circulation" of data once again shows that movement can be an intrinsic part of the object in question, whether in the case of protected or unprotected data.

Yet such "free" movement, in essence, faces the risk of a total loss of control.

Restricted circulation. In the public sphere, several initiatives, in particular relating to security, structure what might be referred to as restricted circulation.

Here are some examples on an international level:

– the SWIFT agreement on the exchange of banking and financial information between Europe and the United States;
– and the PNR (Passenger Name Record) agreement on exchanging information about passengers on transatlantic flights (US and Canada), whose model has been extended to internal European flights.

42 Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data.
43 Regulation (EU) 2018/1807 of the European Parliament and of the Council of 14 November 2018 on a framework for the free flow of non-personal data in the European Union.

The circulation of this information can be primarily traced back to the fight against terrorism, to which has now been added (potentially linked) the fight against transnational organised crime.

Reconciling these agreements with Europe's data protection standards proved a particularly delicate exercise.[44] But on the whole, the imposed model for data circulation was one restricted by a security imperative.

Although they are not central to our analysis, these examples are interesting in the context of total movement beyond control. They are indicative of the intense pressure placed on stakeholders (in this case European) to create forms of data circulation that do not exactly correspond to the model usually applicable to this type of data. This is a form of loss of control, even though European judges are making sure that essential elements of control are maintained.[45]

VI. Total movement of capital beyond control

Let's begin again with the casuistic approach (A) before turning to the dogmatic approach (B).

A. Some examples of total movement of capital beyond control

Like persons and data, capital has a natural propensity for movement, sometimes total, beyond control. We will begin with three illustrations.

Money laundering. Money laundering involves discreetly introducing assets gained through illegal activity into a legal circuit. For example, a bet is placed with a regulated operator using "dirty" money. Any wins from bets placed in that way will be "laundered" or "clean" money provided the illegal source of the money used is not revealed. Here's another example: a squeaky clean investment is financed using money made from illegal trafficking. The return on that investment will usually be considered lawful, unless the legality of the initial financing is challenged.

In such operations, circulation is central. Laundering is achieved by moving from an unlawful to a lawful environment. Capital is most often made up of fungible assets, which is to say that they can be substituted for others, circulate and even change legal status but retain their essential feature: their value!

The news informs us that money laundering operations are closely linked to organised crime and terrorism. In such circumstances, public stakeholders—States in particular—are placed in a position in which they lose control every time launderers escape the many systems put in place to ensure maximum surveillance of the origins of funds used. The speed with which such operations are

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44 See ECJ Opinion 1/15, 26 July 2017, on the draft PNR Agreement with Canada.

45 See on this general topic: D. Svantesson, D. Kloza (eds), *Trans-Atlantic Data Privacy Relations as a Challenge for Democracy* (Intersentia, 2017); R. A. Miller (ed.), *Privacy and Power. Transatlantic Dialogue in the Shadow of the NSA-Affair* (Cambridge University Press, 2017).

executed, their complexity, their tentacular reach across the global chessboard, and the inadequacy of international and regional cooperation and surveillance resources are all parameters that make it easier to avoid detection.

Legal private stakeholders, whether or not they are well-established, are not immune to this phenomenon. Major banking or financial institutions are regularly denounced for their lack of vigilance in detecting money laundering operations.

Lastly, criminals themselves are affected by the loss of control. Laundering operations necessarily carry a level of risk that does not always ensure they will recover their money.[46]

Tax avoidance, evasion and fraud. In the nomenclature of fiscal practices, tax avoidance, which is legal, is clearly distinguished from tax fraud, which is not. The former involves a taxpayer making optimal use of the regulations in place to reduce the amount of taxes and duties she pays. The latter generally involves behaviour with a material element (the manoeuvre) and a moral element (the intention) with the aim of hiding revenue or unduly obtaining a fiscal advantage. As for tax evasion, it is most often associated with the phenomena of regionalisation/globalisation. It is where a taxpayer declares revenue in territories with lower tax rates, thus avoiding the higher taxes payable in other territories where the business operates.

Our analytical framework—total movement beyond control—can potentially cover all of these scenarios. This is systematically true of tax evasion, which requires displacing revenue sources towards a tax haven. And it is true of tax avoidance and fraud whenever the transaction involves moving capital.

The phenomena presented here can take place on a large scale. We will now look at two examples, focusing our analysis on circulation and the loss of control.

The first is taken from an infamous form of VAT fraud known as carousel fraud. The system that has been developed in the EU's internal market (VAT is partly a European tax) involves a contractual chain between companies set up in different member States and engaging in the purchase and delivery of goods or services (real or fictitious). Ephemeral entities known as taxis serve as intermediaries between the businesses using fake invoices. This creates VAT that is never paid but is the subject of a recovery request (deduction or reimbursements) by the other operators in the chain in the different member States. The system can also operate as a loop. This is a known form of fraud. In May 2019 a group of European media outlets evaluated its annual cost at €50 billion. Here, circulation is an intrinsic part of the scheme, and the loss of control on the part of the public authorities in the member States is all too apparent.

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46 See on this plethoric topic: M. Hunault, *La lutte contre la corruption, le blanchiment, la fraude fiscale*, (SciencesPo Les Presses, 2017); K. Ligeti, M. Simonato, C*hasing Criminal Money – Challenges and Perspectives on Asset Recovery in the EU* (Hart, 2017).

The second example relates to tax evasion. Oscillating between tax avoidance and tax fraud, here the manoeuvre involves transferring revenue generated in territory A to beneficiaries located more or less artificially in territory B, where tax rates are lower. This scheme generally includes a complex and opaque chain of players, making it difficult to trace the whole revenue flow. Circulation is once again a central dimension. As for the loss of control, it is exacerbated by the lack of global (or even regional) coordination between tax policies and by the resulting coexistence of fiscal territories with varying tax rates. Attractive territories may be weak States looking to make the most of their marginal position on the global stage, or they may be perfectly developed countries located close to the territory on which the original revenue is generated. This is a scenario that is playing out in Europe, within the European Union, particularly in the case of taxation for the "Big Five".[47]

The rise in securitisation, swaps, currencies and payment methods. The observation here is a simple one: the greater the increase in the number and diversity of sources of value, the greater the volume of assets (currencies in particular), and therefore the greater the phenomenon of circulation and the more difficult it is to control it. This is also true of payment methods. The more diverse and the faster (instantaneous) they become, the more they contribute to the unchecked circulation of money.

To illustrate this, we will look at four major examples.

The first is taken from the financial mechanism known as securitisation. A is the holder of an asset and sells it to B, who then issues securities to C, D, E and so on ("true sale" securitisation). Securitisation can also take place without any asset transfer: A is the holder of an asset and transfers the risks associated with it to B, who then issues securities to C, D, E and so on ("synthetic" securitisation). This kind of securitisation can relate to all types of securities or immovables. In the latter case, it is clear to see the paradigm shift that the process brings about: a building—by its very nature immovable—becomes movable through the securities issued for its value! Specialists are fond of saying that such a transaction is not in itself very risky provided the asset on which the securitisation is based is robust and the investor is well-informed about the security in which they are investing. But the reality is that such securitisation transactions generate multi-directional financial flows on a large scale, which explains why if the assets present a major weakness the entire system is at risk of being undermined. This of course is what happened in 2008 with the infamous sub-prime crisis, leading to the bankruptcy of Lehman Brothers and triggering a chain reaction that affected the global economy. In normal times, securitisation remains under control, but in times of crisis it creates a chain of events in which stakeholders lose control and no-one can stem the tide.

The second example relates to the swapping of debts or loans or parts thereof. These transactions are known as swaps. They were invented in the early 1980s and have seen a great many variations depending on the specific thing being swapped. It is the diversity of these derivatives that has made them so successful. They are of interest from the perspective of movement or circulation in that the swap constitutes the vehicle through which assets are exchanged. This vehicle is in fact a contract,

47 See on this constant theme: F. Schneider (ed.), *Handbook on the Shadow Economy* (Edward Elgar, 2011).

but on a global scale it has now taken on a standard form to circumvent many national specificities. It is a tool that has become practically autonomous and therefore escapes the control of many of the stakeholders involved.

The third example is blockchain technology. This is a general term for the decentralised storage of information that can be privately or publicly accessed. It is a bit like an electronic register in which the chronologically stored information is divided into blocks, which then form a chain with no possibility of moving back. The system as a whole is based on absolute trust in its ability to record entries in a way that is totally irreversible. There are multiple applications for this technology. It is said to have a very bright future in the worlds of contracts, finance and insurance, where blockchains can become the intelligent universe in which transactions succeed and interact with one another over time. One of these applications, no doubt the best-known so far, is the creation of cryptocurrencies, Bitcoin and Diem being the most famous examples. The development of these unconventional currencies escapes the ordinary mechanisms through which central banks control national currencies. This can clearly be seen as a potential loss of sovereignty for States, but it also generates its own risk of losing control: by mechanically increasing the volume of vehicles transferring value, i.e. monetary and financial flows, it increases the number of instances in which control is lost over the networks in charge of these quasi-currencies.

The final example relates to the development of payment methods. Long considered by operators as a topic of secondary importance, the search for new payment methods is now the focus of many initiatives driven by the latest technological advances. The immediate objective is simple: make the purchaser forget the transaction by making it as trivial as possible. Whether 1-click or contactless payment or payment by SMS, recognition (number plate or facial) or blockchain-based algorithm, these methods are all presented as tools to facilitate payments. In the longer term, their objective is to create new operators on the margins of traditional payment businesses (banks). Since by definition payment involves the transfer of value, if its execution is automated, if it no longer requires human intervention or a traditional and highly regulated operator serving as an intermediary, then what we are seeing is yet another loss of control over the flow of money.[48]

B. A typology of the total movement of capital beyond control

Looking at some of the main types of capital circulation, we can consider how they are linked to the analytical perspective of the total loss of control. Two types will be addressed here, each closely intertwined with the next, like the other topics tackled in this chapter.

Mass circulation. When it comes to capital, the traditional approach is to look at mass circulation. Contrary to the case of persons and, to a lesser extent, data, it is very common to distinguish the units of capital in circulation from the masses of capital in circulation.

48 For a contemporary analysis of currency, including cryptocurrencies and payment methods, see S. Gleeson, *The Legal Concept of Money* (Oxford University Press, 2018).

The most striking example is that of monetary mass (or money supply). The quantity of currency in circulation in a given economic zone is monitored and measured by central banks, who regularly release related data. This data is important because, based on a quantitative approach to money (one that is not met with unanimity), it is a potential indicator of price variations.

If we approach this monetary mass from the total loss of control perspective, we see that it has a patent capacity to escape control.

First, there is no stakeholder—not even a central bank—who can claim to control the quantity of liquidity in circulation. The legal tender (coins and notes) emitted by central banks represents less than 10% of this liquidity, with the remaining 90% made up of bank money emitted by commercial banks. Although central banks have tools at their disposal that serve as guidelines (by setting a reference rate, for example), it cannot be said that they control the money supply out there, i.e. the quantity of liquidity in circulation.

Second, calculating this mass is in itself difficult, especially since the introduction of financial products as part of liquidity. These products represent an increasing share of the economy but are very difficult to quantify.[49]

Free circulation. When it comes to capital, free circulation generates contrasted discourses.

The free movement of capital is one of the four pillars on which the European Union's internal market is built.[50] The related provisions underpin many European texts and abundant case law from the ECJ. This free movement has a cross-border dimension, and its scope is very broad. Except in particular cases[51], this freedom is not reserved only for established entities within the Union, in contrast to the free movement of persons or data seen above. It has a global geographic reach.

Comparing European regulations to those in force in France, one observes a difference. France's Monetary and Financial Code (CMF), for example, contains only 34 references to circulation, which is relatively few. These include "fiduciary circulation", "circulation of property deeds" and "money in circulation".

This disparity between the European and national corpora can probably be explained by Europe's need to open up national capital markets that had been closed off until 1989 and by the ensuing scenario in which these markets adopted a *laissez-faire* approach which, by definition, does not require a significant volume of legislative or regulatory discourse.

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49 For an illustration of the discourse on the loss of control over money supply, see: P. Artus and M.-P. Virard, *La liquidité incontrôlable – Qui va maîtriser la monnaie mondiale ?* (Pearson, 2010).

50 Articles 63 et seq. of the Treaty on the Functioning of the European Union.

51 See for example, Regulation (EU) 2019/452 of the European Parliament and of the Council of 19 March 2019 establishing a framework for the screening of foreign direct investments into the Union.

In both cases, the free movement of capital is a reality, even though it is manifested differently depending on the supranational or national context. As in the other categories addressed here (persons, data and waste), the affirmation of free movement is indissociable from the question of its control and the possibility of a total loss thereof.[52]

VII. Total movement of waste beyond control

Let's begin again with the casuistic approach (A) before turning to the dogmatic approach (B).

A. Some examples of total movement of waste beyond control

As with persons, data and capital, waste also has a natural propensity for movement, sometimes total and beyond control. We will look at three examples.

Collection, treatment and recycling of waste. In their approach to waste management, public policies emphasise the combined process of waste collection, treatment and recycling.

These three phases usually involve the displacement of materials. The waste that is collected, treated and recycled is in a near-permanent state of movement. This may be movement within a given State or infra-State territory. It may also be movement involving several local or national territories.

This movement exposes the waste to several possible loss of control scenarios. These may be marginal cases or on a large scale, depending on the context.

But it would be illusory to think that the situation could remain completely under control. Even in the most well-organised and well-controlled environments, there is a loss of control, if only because there is a mixture of different types of waste that can be very difficult (or very costly) to separate.

This risk of losing control is addressed in particular by restrictive provisions aimed at reducing the circulation of waste. Categories of waste are defined which do not all have the same legal freedom to circulate within or outside territorial boundaries.

But total movement beyond control remains a reality. There continue to be points of escape. The most fragile environments have a power of attraction that it is impossible to annihilate, unless all the gaps—often abysses—between the different territories can be filled.[53]

Waste trafficking. Circulation is central to many forms of trafficking, that of waste in particular. The process seems unassailable. By circulating, waste can successively take on legal and illegal forms which are of twofold benefit to a flourishing criminal economy. When waste is treated under legal

52 On the concept of circulation in Financial Law, see M. Teller, "Le droit financier appréhendé comme 'des flux en circulation' : quelles dynamiques et quels enjeux ?" in J.-S. Bergé, G.-C. Giorgini (eds), *Le sens des libertés économiques de circulation – The Sense of Economic Freedoms of Movement* (Bruylant, 2020), p. 91.

53 See M. Faure, A. Lawogni, M. Dehoumon (eds), *Les mouvements transfrontières de déchets dangereux* (Bruylant, 2015).

conditions, it potentially benefits from public subsidies put in place to support recycling, re-use, etc. But instead of being treated in a legal facility, waste is the target of the illegal underground trade which offers better returns. It is then reintroduced into the legal chain of waste treatment and once again benefits from public subsidies. And so on …

In this type of scenario, the loss of control on the part of legal stakeholders is partly due to their incapacity to trace the flows of waste and partly due to the difficulty of seeing circulation as a factor that contributes to the requalification, sometimes legal and sometimes illegal, of the objects circulating across territories.

Parties acting illegally also find themselves in a situation of loss of control. Any movement of waste carries a certain amount of risk that it will be lost or misappropriated, particularly at the point at which it moves from one (legal) state to another (illegal) and back again.[54]

Oil spills. These environmental catastrophes have clear links with the notion of total movement beyond control.

We are reminded of the 1999 sinking of the tanker Erika off the Breton coast. This event led to legal battles on a large scale to determine who was responsible and settle the question of reparation for environmental damage. As part of the many discussions fuelled by this complex situation, the question of waste was essential in determining the liability of oil company Total. The oil that leaked from the Erika was described as waste (abandonment of the spilled product which could no longer be used under normal conditions) and Total was held responsible on the basis that it had extended liability as the producer behind the uncontrolled leak, and therefore behind the production of the waste.

The legal approach in this case is interesting. It highlights the link that can exist between a situation of escape (in this case the uncontrolled leak of matter), its impact on the legal qualification of waste and the principle of liability that stems from it.[55]

The plastic continent. This final example will doubtless convince the reader of the existence, when it comes to waste, of situations involving a total loss of control. It is an example that is gigantic in the truest sense of the word.

The plastic pollution affecting our seas and oceans is now a certainty. Since 1,950 humans have produced more than 8.3 billion tonnes of plastic (*Le Monde*, 2 August 2017), and much of it is constantly spilling into the sea in various forms (plastic, microplastic and nanoplastic).

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54 For an illustration of waste traffic in the context of waste oil processing, see the analysis of L. Neyret, "Trafic de déchets dangereux : quand les dépollueurs se font pollueurs", *Environnement et développement durable*, June 2014, p. 6.

55 See in particular, M. Gibson, *Environmental Regulation of Petroleum Spills and Wastes* (Aspen Publishers, 1993).

We are now hearing regular references to a new "continent" formed of solid plastic islands which, on a planetary scale, represent the equivalent of several million square kilometres (for example in the China Sea or the Gulf of Mexico).

This example must not allow us to overlook the fact that the total loss of control is manifested in many different ways. There is the plastic we eat, the plastic we breathe, the plastic we drink, etc.

No-one has control over such a large-scale phenomenon. And although, on the issue of plastic, we are now seeing cases in which flows are being blocked (China refusing to continue treating plastics from abroad) or threats to do so (United Kingdom and Brexit), it is a safe bet that these tense situations will feed into parallel trafficking systems producing new forms of circulation, and therefore escape our control.[56]

B. A typology of the total movement of waste beyond control

Looking at some of the main types of waste circulation, we can consider how they are linked to our analytical total loss of control perspective. Three types will be addressed here, each closely intertwined with the next, like the other topics tackled in this chapter.

Mass, spherical or microscopic circulation. The purpose of this composite terminology is to describe the different scenarios in which the unit-based approach to the circulation of waste cannot account for the exact nature of the phenomenon being studied.

The first scenario is that of mass circulation phenomena. When it comes to the circulation of waste, the quantity in circulation can be a crucial criterion in the total loss of control. Capacities to collect, treat, recycle and reuse waste are often tributaries that determine the quantity of waste to be dealt with. The greater this quantity, the more it may prove difficult to put in place these different systems of control. This is a problem of mass.

The second scenario is what one might call spherical circulation. This term refers to the notion of waste circulating in a continuous dynamic of movement within a given area. Two of the examples we have already seen immediately come to mind: the circulation of waste in space placed into orbit and the circulation of plastic waste in our oceans. In both cases, the total loss of control is manifested by the unstoppable nature of the process of circulation in question. Waste in a state of movement occupies all space and it is very difficult, if not impossible, to recapture it in any significant way, unless we are able to stop the circulation within these spaces.

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56 See for example: T. Henry, "The ocean's plastic problem is closer to home than scientists first thought", <https://Theconversation.com> (UK Edition), September 2019.

The third scenario is that of micro-waste. When it comes to the small and the infinitely small, the total loss of control can be explained by our inability to see this waste with the naked eye; it therefore passes through whatever filtering procedures we might put in place. For example, following the 2011 nuclear disaster in Fukushima in Japan, a perimeter was established around the 40 km dead zone, particles containing radioactive caesium were detected in Tokyo, several hundred kilometres away. The same is true of all of the pharmaceutical residue that ends up in our waste water, which continues to be present in the treated water that we consume. That which is small or infinitely small is inherently linked to certain forms of total loss of control.[57]

57 On the drama of Fukushima, see F. Guarnieri, "Fukushima seven years later: case closed?", <https://Theconversation.com> (Global Edition), March 2018.

Chapter 2
Challenging Flow and Control Models

The geophysical displacement of goods and of persons raises many questions for the law.

These are often difficult questions. There are two reasons for this.

First, it can be said that the law involves creating stasis. It approaches all kinds of realities by endeavouring to squeeze them into legal categories to which distinct and, if possible, predictable legal regimes are then assigned. There is nothing trivial about such an approach. Creating stasis from movement is no mean feat.

Second, the law never develops just one point of view on the things it tackles. It is not a monolithic, universal and permanent discipline. It varies from one area to the next, and from one place or epoch to the next. And the focus of this essay exacerbates this composite and evolving state for one well-established reason: the celebrated theory that tells us that movement is relative. Depending on one's perspective, it can be described in totally different ways.[58] And so it is difficult to talk about it univocally.

This produces a whole series of difficulties that legal scholars must face each time they endeavour to use the tools of their discipline to tackle a situation in movement.

It is the ambition of this chapter to analyse these difficulties.

We will begin with a critical view of the way in which the law approaches movement generally.

I. The challenging legal spatialisation of flow

The term "legal space of flow" is not common among legal scholars. It will be studied in more detail in Chapter 3, but merits a preliminary explanation here (Section A below). We will then consider the difficulties for the law of defining three types of spaces of flow: national (B), international (C) and European (D).

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58 For an outreach presentation of this theory, see: R. C. Tolman, *The Theory of the Relativity of Motion: An Introduction to the Theory of Relativity* (Relativity Theory Press, 2010).

A. What is a legal space of flow?

What is meant by the legal spatialisation of flow? It simply means defining a legal space of flow.

Two examples to illustrate: local circulation map and a transatlantic flight. This task is less straightforward than it may appear at first.

We are not talking about the largely established practice of determining in legal terms all or some of the elements of a situation of movement in a given area, whether locally, nationally or internationally.

Rather we are talking about ensuring that the legal space espouses the—necessarily dynamic—forms of the situation in movement.

Let's look at two examples to better understand this concept of the legal spatialisation of flow: one on a local and one on an international scale.

On the scale of a town or city, urban space can be represented by a map of the circulation of persons and goods (the same could apply on a much larger scale, whether intercity, regional, national or international). This task is generally accomplished through public policies focused on mobility. The stated aim is to improve circulation so that each of us can move around in more optimal conditions. These policies are of keen interest to the law. Administrative law, particularly in relation to urban planning, provides the essential legal frameworks with which to structure this circulation.

This type of spatialisation does not only relate to the urban world for inter-urban connections. It can also affect rural and even isolated areas. This can be seen in the remarkable case of ski lifts installed when creating or extending winter resorts.

These working assumptions point to the fact that movement is legally spatialised.

It is structured in relation to a space. This space represents a conceptual and functional unit. Identifying it enables all of the potentially applicable legal rules to converge towards a single phenomenon: movement within that space.

In a more micro-legal context, we can find another example of the legal spatialisation of flow in an international environment.

Let's consider how a transatlantic flight between Nice and New York is organised. Imagine a legal scholar who sets about trying to identify all of the legal rules put in place to allow this flight to operate. These rules may be State rules, inter-state, regional (European) or even private (transnational). They may fall under public law or private law, binding or simply complementary, etc.

How can we form a picture of this burgeoning and heterogeneous set of rules that apply to movement?

The response is to be sought in the legal spatialisation of flow. A transatlantic flight gives rise to a normative space formed by combining all of the rules that govern that particular situation in movement. This space is highly constructed and entirely thought out and organised for one sole purpose: the movement of the aeroplane from Nice to New York.

Can this analytical framework provided to us by legal spaces of flow be applied to the three major legal environments that are national, international and European spaces?

This approach to legal constructs at different levels, adopted and theorised by the author in previous research[59], may prove useful.

The law offers a multitude of implementation contexts and it is important to develop multiple perspectives of how the law operates depending on the level in question.

B. Defining a national space of flow

Two questions need to be asked here: is it possible to speak of "space" in a national context, and how is it to be approached as a space of flow?

Usage and non-usage of the term "space" in a national context. In the language of the law, the term "national space" is rarely used.

Far more common is the term "national territory", one of the three components of the State. In modern law, the notion of territory is intimately linked to that of the State. Together with a population and political authority, it is one of the three primary components (1933 Montevideo Convention). This territory is said to comprise different "geographic spaces": terrestrial, aerial and maritime. Its main function is to delimit the scope of validity of the State's legal order. The territory is what establishes territorial sovereignty, the application of laws therein and the spatial competence of State authorities, particularly the jurisdictions called upon to serve justice in the name of that territory's people. The territory can also be the subject of disputes and fuel opposing interests which international public law tries to settle.[60]

This results in confusion between space and territory. In its national dimension, they are one and the same insofar as lawmakers do not generally see the point in attributing a specific meaning to national space.

Paucity of modelling of national space as a space of flow. Is it common to refer to national space, i.e. national territory, as a space of flow?

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59 J.-S. Bergé, G. Helleringer, *Operating Law in a Global Context: Comparing, Combining, Prioritising* (Edward Elgar, 2017).

60 See in particular, M. G. Kohen, M. Hébié (eds), *Research Handbook on Territorial Disputes in International Law* (Edward Elgar, 2018).

Let's approach this question from the perspective of public freedoms, in particular the right to come and go as one pleases.

In France, this right is not expressly stipulated in any text of constitutional value (even though it did feature in the drafts (the "April Declaration") for the Preamble to the 1946 Constitution), and it was 1979 (in a case on motorway tolls) before the Constitutional Council issued a judgement on this question for the first time.

This is not an absolute freedom, and the essence of the judges' work related to the control of breaches thereof. But cases in which encroachments on the freedom of movement (such as house arrest) are deemed excessive are few and far between.

A similar situation can be observed in several countries studied as part of this research, where internal movement can take on a very significant dimension (Brazil, Canada and the United States). The books, collections of essays and case law dedicated to freedoms rarely include specific references to the right to come and go as one pleases in national spaces.

So we can conclude that "national space" is not seen in any cardinal sense as a space of flow.

C. Defining an international space of flow

In the international legal environment, two characteristic criteria of this environment are frequently used: its extraneous and international qualities.

Do these criteria allow us to assert the existence of an international space of flow?

The extraneous criterion. In law, extraneity can be used to describe an otherness whose reference point is the State's legal order. That which is not national is foreign.

It is a criterion used in private international law to mark the existence, in a private context, of a factual or legal element located abroad and which can lead to the application of specific rules, such as the rule whereby a foreign law can be deemed applicable.

In public international law, this notion does not play a central role. Because this branch of the law is intended to operate beyond national/foreign distinctions, it only attaches secondary importance to the notion of extraneity (for example to describe a foreign State's compliance with its rules on its national territory).

When it comes to international space, any extraneous quality can be said to be antinomic.

To define international space, one must simply eschew any notion of extraneity. For example, to assert a space formed by a set of substantive international rules presupposes the circumvention of considerations relating to any internal legal order, i.e. national or foreign. International maritime and air space can only exist by erasing State territories and thereby any distinction between national and foreign.

This is even more true of transnational space (merchandise, sporting activities, organised crime, etc.), which literally penetrates borders.[61]

And what about the international criterion?

The international criterion. This is a highly multifaceted criterion. Looking at the most common ways in which it is understood, we will now consider to what extent or whether it can be used to define international space.

One understanding of the international dimension is that it stems from extraneity. Any situation of an extraneous nature is international. This minimum requirement can be characterized by the realisation of a material fact: part of the situation to be governed is located in a foreign country. It may also be the product of a legal construct: the situation becomes international because the parties involved decide to invoke a foreign legal instrument, thus rendering it international (e.g. parties to a purely internal contract choosing a foreign legal system; or creating a legal entity in application of foreign law).

Another understanding is that the international dimension marks the departure beyond purely national (and foreign) considerations, with legal questions taking on a truly international quality. For example, a rule governing public order will be said to be truly international. Similarly, an adjudicator (such as an arbitrator) is said to have a veritable international scope.

The international dimension is also said to have a systemic quality. References to an international legal order clearly reflect this point of view. We may be talking about a legal order with an essentially inter-State dimension, as is the case in public international law when it is the international legal order that primarily determines the relations between States. But from a broader perspective, we could also be talking about transnational legal orders capable of organising any type of activity (standardisation, sport, trade, etc.).

The final understanding of the international dimension is that it is of an allegorical nature. For example, when legal scholars refer to the "search for solutions of international harmony" (private international law), to the existence of "an international community or society" (public international law or transnational law) or to "the needs of international trade" (law of international trade or arbitration), these are not established concepts but rather figurative and all-encompassing representations that play a very important role in the construction of legal domains.

To what extent do these different interpretations of the international dimension allow us to describe the existence of an international space?

In the first interpretation, the notion of what is international presents the same shortcomings as extraneity (see above). It is not therefore in itself sufficient to describe the existence of an international space.

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61 On this topic, see E. Wyler and A. Papaux (eds), *L'extranéité ou le dépassement de l'ordre juridique étatique* (Pedone, 1999).

The second and third interpretations offer more interesting perspectives. Inherent in the assertion of an international or transnational rule, adjudicator or legal order is the erasure of a purely territorial division in favour of the emergence of new spaces. Generally speaking, there are no international territories specific to such legal entities. However, there are international (or transnational) spaces within which these different concepts play out.

The fourth interpretation is probably the most fruitful. You might say that the poetic reference to solutions of international harmony, the international community or society and the needs or interests of international trade loosens the spirit of schemas essentially constructed on the notion of the State's legal order. The extent of this looseness varies. But to describe the environment in which all of these notions are evolving, referring to a space (international or transnational) may prove very useful.[62]

The relativity of legal discourse on international spaces of flow. Given that the extraneous criterion, whether taken alone or intertwined with the international criterion, cannot be used to designate spaces, it is impossible to argue that it helps shape spaces of flow.

However, we can look at the potential offered by the other three interpretations of the international criterion in terms of asserting the existence of international spaces of flow.

To what extent do they allow this?

The answer is that the legal discourse on this specific question displays a great deal of relativity.

If one reads the texts affirming the existence of rules and adjudicators with an international dimension, an international or transnational legal order, solutions of international harmony, an international community or society or the needs and interests of international trade, one can hardly say that the watchword is movement.

Movement is of course sometimes addressed. The intervention of a rule or an adjudicator with a truly international dimension can occur as part of a situation in movement. The affirmation of an international economic legal order (e.g. WTO) is initially correlated with the doctrines of free trade. The first stage on which the transnational order for merchandise or organised crime played out was the sale and transport of merchandise or the illegal trafficking thereof. Solutions of international harmony can be based on mechanisms of referral or recognition that to some extent structure the *circulation* of national legal solutions. The international community or society is built on a wide range of mechanisms for the exchange of information and practices. And the needs and interests of international trade are a vector for a discourse on free trade designed to protect its interests.

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62 On this topic, see S. Poillot-Peruzzetto and J.-P. Marty (eds), "L'internationalité, bilan et perspectives", *Revue Lamy Droit des affaires*, Supplement No. 46, February 2002.

But all of these discourses are very much relative when it comes to asserting the existence of international spaces of flow.

In the eyes of the law and of legal scholars, there can only truly be international spaces of flow in scenarios in which the law effectively participates in the organization thereof. This is far from being systematically the case.

The law's contribution is very unequal from one situation to the next. This is true, for example, of solutions of international harmony which require more than the mere "goodwill" of stakeholders to coordinate different systems. True international harmony demands a very high level of legal construction which all too often is not achieved on an international scale. The same can be said of the international community or society whose achievements are not all thanks to the formation of an international space of flow, far from it.

Indeed, the law very often plays no more than a bit part in international movement, which is a paradigm that is essentially foreign to the law and its constructs. Its primary origins lie in political economics.

And so one must accept that, for different reasons from those that mark national spaces, international space cannot be analysed on the face of things as a legal space of flow.

In short, movement has not been theorised as part of international space. It is of course present there but only incidentally.

D. Defining a European space of flow

By European space, we refer here only to the context of the European Union, which offers an unparalleled example in the world today in terms of movement not found in the law of the Council of Europe.

In the law of the EU, it is a well-established theme. Europe has given rise to a space of flow. But what terms should we use to discuss it?

Postulated but ill-defined spaces. The EU has given rise to 2 major "spaces": its internal market and the area of freedom, security and justice (AFSJ).

These dimensions—"internal market" and "freedom, security, justice"—have been carefully unpacked. This is true of the internal market (originally known as the "common market"), which served as the foundation for the European Economic Community (EEC). This market was theorised in the legal world and all of the new legal constructs deployed therein were the fruit of extensive efforts.

More recently, European law on the freedom of movement, security and justice has also been theorised. This is particularly demanding work. It is a heterogeneous area of law. To tackle it, one must combine legal specialisations that are almost exclusive of one another (public, private, civil, criminal, internal and international law).

In these two spaces, movement is omnipresent. In the internal market, it has four components: goods, services, capital and persons. As for the AFSJ, its first dimension "freedom" is directly linked to the movement of European citizens (not including economic entities, who fall under the internal market) and third country nationals. The two other dimensions are "security" and "justice". But they also contain provisions relating specifically to movement in areas that are particularly demanding (exchanges of information relating to security, "movement" of judicial decisions, evidence, etc.).

This rather advantageous landscape masks a significant weakness, however.

From the theoretical perspective, what is meant in legal terms by the space of the "internal market" and "freedom, security and justice"?

We should remember that the notion of space is distinct from that of territory, which in the language of EU law (particularly in the two treaties on the European Union and how it functions) refers to the territories of member States.

In so far as it is incorrect in EU law to refer to the existence of any "European territory", one might think that the notion of a "space" is simply used as a substitute.

But such a justification by default is not satisfactory.

The term "space" is not only applied as a layer atop the territories of member States. It carries its own meaning, especially when, as is very common in European law, it is associated with vast phenomena of movement.

And, as far as the author is aware, this term has not been the focus of any significant research.[63]

Emphasising European freedoms of movement. The uniqueness of European law is such that considerable efforts have been made to extricate it from the dual cradle of national and international law. This was often a fraught battle, with various pioneers emerging, and can now be said to be a reference in the composite world of legal experts (academics, judges, lawyers, legal advisers, etc.).

But with hindsight one could be forgiven for thinking that things became a bit unhinged!

Here's why.

The ambition to legally construct a European space of movement spanning various national territories is an extraordinarily difficult one. This is true of any legal construct addressing movement.

63 See for example: K. Lenaerts, P. Van Nuffel, *European Union Law* (Sweet & Maxwell, 3rd ed., 2010).

As advances were made in European law, a striking trend emerged which was to expand or exaggerate the reach of European freedoms of movement. This trend is now well-established. It can be observed in various European countries and potentially among all legal scholars, whether or not they feel in sync with the European project.

This over-emphasis, somewhat similar to the metaphorical approaches to movement adopted in the international context, clouds our understanding of the European space of movement. It is already probably the world's most developed supranational space in terms of movement, so is there any need to go even further and heighten its potential beyond what is provided for in the European treaties?

To illustrate this, we will look at two major developments in the case law of the ECJ.[64]

The first relates to what is known as the passive freedom to provide services. The Court's case law has underpinned a particularly significant extension of free movement in this area.[65] This extension resulted from the enshrinement of the right of beneficiaries of such services to benefit from free movement. These beneficiaries are not expressly referred to in the European treaties, which only refer to service providers. But the ECJ recognised that tourists, recipients of medical care, business travellers or students should be seen as beneficiaries of services to whom the principle of free movement grants the right to travel to another State and avail themselves of a service there. All nationals of member States who, without benefiting from any other freedom guaranteed by the Treaty, intend to do this fall under the provisions relating to the freedom to provide services. Although rarely criticized by specialists in the area, this extension of European freedoms of movement raises certain questions. It places Europe's mechanisms, in particular that which ensures free trade, in relationships that include non-service providers, with all of the additional constraints that that implies for national public authorities. In other words, it marks the upheaval of the initial ambition in the treaties, which were much more modest.

The second development, at times linked to the first, relates to the affirmation of a subjective European right to movement. This is a long-standing affair. Those who know the genealogy of a key ruling in the European construct (CJEU, 5 Feb. 1963, 26/63, Van Gend en Loos) will know that the affirmation of this subjective right found its way into one of the translations of the Court's judgement, even though the expression did not appear in the original text. Other ECJ judgements provided opportunities to discuss this topic, and it has been a recurring theme in the doctrine in various guises. What is most striking in the affirmation of the subjective right to movement and its variants is the willingness to give this legal concept quasi-automatic application. If such a subjective right exists, then it essentially depends on the will of its holder. We should not be afraid to say that this approach can rarely be verified in practice. One need simply look at the Court's body of case law as a whole in this area to understand that freedoms of movement, when it comes to their practical

64 On the central role played by the Court of Justice in the development of EU Law, see M. P. Maduro, L. Azoulai (eds), *The Past and Future of EU Law* (Hart, 2010).

65 See in particular: ECJ, 2 February 1989, Cowan, Case 186/87. For an example of the instrumentalization of the passive freedom to provide services by a national judge (UK) inclined to circumvent an internal public policy rule on the prohibition of post-mortem insemination, see our article: *Le droit communautaire dévoyé : le cas Blood* (Europe, 1999/12), n° 12.

implementation, clash with the local and national contexts in which they are exercised. It is all too often forgotten that European law is of a profoundly incomplete nature. It is therefore very often an exaggeration to assert that the European Union has established a prerogative of movement in a multi-territorial space that is equivalent to a comprehensive subjective right.

II. The difficulties of distinguishing between different spaces of flow

To understand the uncertainties inherent in the legal distinction between national, international and European movement, one must consider the scenarios in which this distinction clearly reveals three different bodies of rules.

What one can expect from the legal distinction between spaces. Each time the law sets out to tackle a situation in movement, this raises the question of defining the different legal regimes according to the national, international and European dimension of that movement.

By way of illustration, let's return to the circulation of waste. In order to be treated or recycled, waste must often first be moved. This circulation is highly regulated. The law can, for example, favour short waste treatment circuits. It can frame, limit and even prohibit the export or import of certain types of waste.

Depending on the territory or territories affected by the transport of waste, the applicable legal rules are not necessarily the same.

An example can be found in one EU regulation[66] which distinguishes between no fewer than five different legal regimes governing movement:

- transfers within the European Union, whether or not they transit through third countries;
- transfers exclusively within each member State;
- exports from the EU to third countries;
- imports into the EU from third countries;
- transits through the EU beginning and ending in third countries.

This type of breakdown between different bodies of rules can lead to long-haul legal battles.

An example of this is the case of S.D. Myers Inc. vs. Canada (1998–2002) about the transport of waste on the Canadian–US border.[67] The case was approached in light of the free trade agreement between the two countries (NAFTA). The court of arbitration (with jurisdiction in application of the rules of the UNCITRAL) ruled against Canada for refusing to export waste even though it contained substances (polychlorinated biphenyls or PCBs) that are now forbidden under international

66 Regulation (EC) N°1013/2006 of the European Parliament and of the Council of 14 June 2006 on shipments of waste.
67 On this case, see: <https://www.uncitral.org/transparency-registry/registry/data/can/s.d._myers_inc.html>.

regulations (2001 Stockholm Convention on persistent organic pollutants, ratified by Canada). As the legal arguments played out, the discussion addressed the merits of the cross-border transport of waste compared to internal transport within Canada intended for a treatment facility located further away than the one in the United States.

This manufactured state of affairs is undermined each time the distinction between national, international and European situations is blurred by phenomena of movement.

To begin, we will look at the case of purely domestic situations faced with such phenomena.

Purely domestic situations and spaces of flow. The term "purely domestic situation" is generally used to refer to a national (domestic) space in opposition to international or European space. The aim is to lay down the limits between spaces to avoid international or European legal rules interfering with national ones intended to govern situations that are exclusively located within a single State.

This is a notion heavily drawn upon in the EU when it comes to freedom of movement. Implicit in the benefit of the rights associated with the freedom of movement is travel within the Union. "Purely domestic situations" therefore fall outside the scope of this freedom.[68]

We also find this notion in international law, each time the international dimension of a situation is a precondition for the applicability of a rule not intended to produce effects within the domestic order.[69]

However, great uncertainties remain in relation to this compartmentalisation of domestic space.

In EU law, it is common for purely domestic situations to be subjected to EU rules. For example, in the name of the freedom of movement enjoyed by European citizens, member State nationals have been authorised, even in the absence of any proven mobility, to invoke European law to supersede their national authorities.[70]

In international law, the compartmentalisation of the rules governing movement is not always possible. The Basel Convention, for example, not only contains rules on the import and export of waste: as the end of its title suggests, it also sets out the rules applicable to the disposal of waste, rules which have an impact on national waste as well as on that which is imported or exported.

This type of example shows that, even in a scenario in which a legal rule is only intended to apply to European or international movement, it is quite common for it to spill over that framework and affect purely domestic situations.

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68 See for example, ECJ, 28 March 1979, Saunders, Case 175/78.

69 See for example, Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (1989), which defines specific rules for the import and export of waste.

70 See for example, ECJ, 2 October 2003, Garcia Avello, Case C-148/02; ECJ, GC, 8 March 2011, Zambrano, Case C-34/09.

There are many reasons for this overspill. For example, it may be that a national territory does not wish to deprive its citizens of the rights granted to those who participate in some form of movement, so it can avoid situations of so-called "positive discrimination".

But it may also be due to the tremendous difficulty of containing a situation in movement within precise boundaries. It is as though movement resisted any stasis imposed by the law. When the law tackles movement, it must accept that its contours are uncertain, especially where it spills over into situations considered domestic.

International situations and spaces of flow. In this section focused on international situations and movement, the aim is to show how the law is capable, for a given legal situation, of either establishing a link between movement and the international dimension or completely overlooking it.

The example chosen to illustrate this is the definition of an international contract.

In the French *Pélissier du Besset* case[71], judge Matter lent his name to a famous doctrine under which payment is deemed international if the related contract produces "ebb and flow across borders". Much was at stake in this qualification, since it involved determining whether cross-border payment could escape the application of rules intended to govern national payments. Movement here plays a central role in defining the international nature of the situation, and the image of twofold movement is made perfectly explicit.

This approach to the international dimension of a contract based on movement is completely absent from a key instrument of today's applicable positive law: the EU regulation 'Rome I'.[72] While the rules of the Regulation are intended to apply "in any situation involving a choice between the laws of different countries" (Art. 1.1), it stipulates that "The fact that the parties have chosen a foreign law [...] shall not, where all the other elements relevant to the situation at the time of the choice are connected with one country only, prejudice the application of rules of the law at the country which cannot be derogated from by contract" (Art. 3.3). In other words, under the provisions of this text, parties to a purely domestic contract can artificially create the conditions for a situation involving a choice between legal systems by choosing to apply the law of another State. Here, there is no reference to the notion of movement. It is not a precondition for the application of a rule specially designed for international contracts.

The comparison between these two solutions clearly shows that movement is not a clear characteristic indicative of an international situation. The explanation for this is to be sought in the recurring difficulties of defining an international contract.[73] But the fact remains that movement can be at the heart of such a contract just as it can be totally absent from it.

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71 Cour de cassation (Ch. civ.) – 17 May 1927, *Dalloz Périodique* 1928 I. 25, case note H. Capitant.

72 Regulation (EC) N°593/2008 of the European Parliament and of the Council of 17 June 2008 on the law applicable to contractual obligations (Rome I).

73 On the relative and functional nature of internationality applied to international contracts, see M.-E. Ancel, P. Deumier, M. Laazouzi, *Droit des contrats internationaux*, 2nd ed. (Sirey, 2019), p. 5 et seq.

Situations in Europe and spaces of EU flow. The third scenario relates to the definition of European situations and their relationship with movement.

The rules of the internal market only apply, in principle, to journeys within the European Union. Such is their very purpose. For example, the Treaty on the Functioning of the European Union[74] only provides for the free movement of persons within the EU.

However, in some cases, the provisions on the free movement of persons can affect regulations with a global reach covering cases of mobility with or between third countries as well as European mobility. The ECJ has recognised that in such cases European law can affect an international regulation as a whole provided a minimum link can be established with the territory of an EU member State.[75]

This type of ruling shows that, while the application of European provisions on free movement requires "localisation" in an EU territory, European law does not subordinate its application to the condition of movement being effectively observed within the European area.

The notion of movement here is uncertain. The law on European movement applies to situations in third countries in which there is no strictly European movement as such.

III. The difficulties of addressing the modalities of movement in legal terms

The law has seen significant developments in addressing the modalities of movement. This is a challenging area with significant uncertainties remaining, whether in domestic, international or European law.

The domestic legal environment. In domestic law, one might ask whether a thing's state of movement plays a role in the way it is dealt with by the law.

At first glance this question seems simple: should a thing's movement be made a characteristic trait of its legal regime?

But the response is not as simple as first appears.

One answer would be to say that putting something into a state of movement does not fundamentally change the way it is dealt with by the law.

An opposing answer would be to argue that something in a state of movement has specific characteristics with a significant impact on its legal regime.

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74 Articles 45, 49 and 56 of the TFEU.

75 For an example in the field of sports regulation: ECJ, 12 December 1974, Walrave, Case 36/74.

One type of movement generated by humans has been the stage for such discussions: road traffic.

The earliest cases related to horse-drawn vehicles and in France were usually treated in reference to the laws on liability for injury caused by animals, equivalent to the laws on liability for injury caused by things.

With the emergence and mass development of motor-powered land vehicles, the question was seen in a new light. Should these vehicles be seen as ordinary things that would fall under the laws on liability for injury caused by things? Or, on the contrary, was a new specific legal regime needed for this category?

Such questions are now seeing new developments with the prospect of self-driving vehicles being put into circulation. Will this new mode of transport, without the need for human intervention, lead to reflections on the creation of a new legal regime?

Faced with such questions, it is worth considering just how difficult an issue this is to resolve. To do this, we will focus on the case of French law governing traffic accidents.

A piece of legislation was amended in 1985 in this area.[76] Both the debate that preceded the legislation and that which opened up immediately after it came into force show the extent of its complexity.

To put it simply, there was one conservative view that fought tooth and nail to defend the need to maintain traffic accidents within the realm of the ordinary legal mechanisms for civil liability, in particular liability for injury caused by things. In contrast, another reformist view argued that traffic accidents needed to be taken out of this regime and placed under a new one.

The introduction of the 1985 legislation sealed the win for the reformists.

Without exploring all the aspects of the legal regime finally chosen by the legislature and subsequently consolidated by case law, it is worth noting that this approach to the regulation of traffic was essentially developed as a legal regime for traffic accidents. In particular, the statistical approach to accidents (sometimes referred to as “accidentology”) played an absolutely fundamental role in this key reform of French law.

Indeed, the notion of movement inherent in traffic played very much a secondary role. What counted above all was managing the risk of “accidents”.

This state of affairs points to the somewhat uncertain nature of the legal regime governing traffic. Instead of tackling the issue head-on and addressing the question of whether a thing in a state of movement has a different legal regime to one in a state of inertia, the reverse approach was

76 Law No. 85-677, 5 July 1985, “tending to improve the situation of victims of traffic accidents and to speed up compensation procedures”.

adopted. Things with their own independent dynamism were assimilated to inert things. Doubtless they played a role in profoundly modifying the legal reasoning underpinning the 1985 legislation, but it would seem that recognising that these legal changes were the direct consequence of the presence of things in a state of movement with their own legal nature is a step that has never been collectively taken in French legal thinking.[77]

The international legal environment. We will begin by looking at private international law in relation to "movement", in particular the legal mechanism for settling "mobile conflicts".

The notion of a mobile conflict in private international law is about whether, in dealing with a private international situation, one must take into account the change in location. For example, if a rule in private international law states that it is the law in the item's location that is to be applied, which law applies if that item is moved from one State to another? Similarly, if the rule provides for the application of an individual's domestic law, what happens if that person changes nationality?

Faced with this difficulty, authors (including Etienne Bartin, who came up with the term "mobile conflict") have suggested different approaches, including reliance on the theory of acquired rights or the application of the principles of transitory law. The least that can be said is that such proposals have hardly been retained in positive law. The generally recognised trend is that the change in location is dealt with by interpreting the rules of private international law. Some rules involve taking into consideration a past event (such as a person's nationality at the time of their birth), whereas others on the contrary require a reference to more recent events (such as the item's current location).

Without needing to go into the details of these highly technical discussions, it may be worth exploring the way in which the discourse on movement is or is not taken into account when dealing with so-called mobile conflicts.

There are two striking features of the analyses.

First, if the term "mobile conflict" is not used to refer to a rule of (mobile) conflict that is specific to such a situation, and if ultimately one must return to the stipulation of each specific rule for legal conflicts, as in the case of positive law, then its only use is to refer to a difficulty without providing a solution. It is therefore of little use.

Second, whatever the analysis, mobility is reduced to two separate events from which to choose: the location before or after the movement. This approach, driven by the logic of the rules that are being applied, does not address the situation in movement as such. Either the mobility is denied in the event that the original location prevails, or it is dealt with in terms of the effects produced by the changing situation. But under no circumstances is the conflict actually "mobile". It is attached to one of the two locations. And so the word "mobility" has a meaning that is at the very least uncertain.[78]

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77 On the French liability regime for traffic accidents, see G. Viney, P. Jourdain, S. Carval, *Les régimes spéciaux et l'assurance de responsabilité* (LGDJ, 4th ed., 2017), No. 129 s.

78 For a presentation of the theories involved and the legal solutions at two different periods, see in particular, H. Batiffol and P. Lagarde, *Droit international privé* (vol. 1, 8th ed. LGDJ, 1993), No. 318 et seq.; M. Audit and L. d'Avout, *Droit international privé* (LGDJ, 2018), No. 306 et seq.

Another illustration can be found in international transport law when it aims to develop what is termed a "multimodal" approach.

Transport law is compartmentalised into different families of legal rules depending on the mode of transport in question: maritime, land, air, rail, road, waterway. From an international perspective, analysts have asked how it can be possible to organise a veritable transport chain in which the merchandise moves from a ship to a train and onto a truck. The legal spaces concerned by this type of practice may be internal, international or European, or even all three at once. But the approach is intended to be global insofar as all of these aspects are considered at the same time in an effort to make all the legal instruments converge towards the same objective: the end-to-end organization of transport involving a succession of different modes of transport.

To accompany such a highly elaborate system, the law has taken several different initiatives. But as specialists recognise, these have not worked. Examples include:

- the fact that the 1980 UN Convention on multimodal transport never came into effect due to insufficient ratification;
- the major difficulty of organising such transport based on contract law, given the divergent regulatory approaches (particularly when it comes to freight brokers);
- the particularly laborious process of ratifying the 2008 Rotterdam Convention, developed by the UNCITRAL, on the international carriage of goods wholly or partly by sea.

This trend is not the reserve of international law. There have been many difficulties at a European level in promoting specific initiatives (such as the Integrated Services in the Intermodal Chain, or ISIC project) as well as domestic difficulties (particularly in France) in developing this type of combined transport, especially via waterways, railways and roads.

These difficulties essentially related to the fragmentation of the applicable legal rules. The notion of "multimodal movement" has not become sufficiently rooted to achieve convergence between the multiple international legal instruments. It is a legally uncertain notion.[79]

The European legal environment. The third illustration relates to the way in which European (EU) law has a tendency to develop an unclear discourse on the issue of movement, despite being accustomed to working closely with it. This example is taken from a sequence of ECJ rulings on the EU's external competence.

In 2017 the Court issued two opinions respectively on the EU's exclusive competence to sign the 2013 Marrakesh Treaty to facilitate access to published works for persons who are blind, visually impaired or otherwise print disabled[80] and on the EU's exclusive and shared competence to sign a free trade agreement with the Republic of Singapore (2018).[81]

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79 For an overview, see M. Spanjaart, *Multimodal Transport Law* (Routledge, 2017).
80 ECJ Opinion 3/15, 14 February 2017.
81 ECJ Opinion 2/15, 16 May 2017.

These two opinions brought two distinct areas face-to-face: common commercial policy (hereafter referred to as trade policies) and the protection of intellectual property. To distinguish between the two related legal regimes when it came to the EU's external competence, the European judge dedicated a significant portion of his analysis to movement.

In opinion 3/15, he wrote, "It is thus apparent not only that the cross-border exchange promoted by the Marrakesh Treaty is outside the normal framework of international trade but also that the international trade in accessible format copies which might be engaged in by ordinary operators for commercial purposes, or simply outside the framework of exceptions or limitations for beneficiary persons, is not included in the special scheme established by that treaty" (pt. 97).

In opinion 2/15, he argued that "in the light of the key role […] that the protection of intellectual property rights plays in trade in goods and services in general, and in combatting unlawful trade in particular, the provisions of Chapter 11 of the envisaged agreement are such as to have direct and immediate effects on trade between the European Union and the Republic of Singapore" (pt. 127).

So what are we to make of these two opinions specifically in light of the Court's discourse on movement?

On the one hand, the Marrakesh Treaty is said not to relate "specifically to international trade" and to be "outside the normal framework of international trade", even though at the same time it sets the objective of "facilitating access to published works" protected by intellectual property law.

On the other, one finds the free trade agreement with Singapore which, even though it contains a "set of provisions" designed to ensure "an adequate level of protection of their intellectual property rights" and "standards of protection of intellectual property rights", "in no way falls within the scope of harmonisation of the laws" but rather sets out to "govern the liberalisation of trade", even stipulating that where intellectual property law plays a key role in international trade, the dedicated provisions in a free trade agreement are "such as to have direct and immediate effects on international trade".

All of this does not stand up to scrutiny. The ECJ may assert in opinion 3/15 that "international trade", including "for commercial purposes", is not included in the specific regime established by the treaty, but it struggles to convince. Article 5 of the Marrakesh Treaty focuses on the "cross-border exchange of accessible format copies", Article 6 on the "importation of accessible format copies" and Article 9 on "cooperation to facilitate cross-border exchange". The purpose of the Marrakesh Treaty may be highly specialized, but it would be difficult to argue that it does not contain entirely innovative provisions on the cross-border movement between signatory States of works protected by copyright intended for a targeted readership (blind, visually impaired and otherwise print disabled persons).

As for opinion 2/15, the ECJ quite simply contradicts itself. On the one hand, we are told that the free trade agreement with Singapore does not seek harmonisation of intellectual property laws, and on the other that it lays down "standards of protection of intellectual property rights displaying

a degree of homogeneity" within the area of EU–Singapore free trade. Furthermore, one need simply read Chapter 10 of the agreement to note that many of the provisions have a substantive dimension, meaning that they relate to the subject of intellectual property itself. To take just one example: durations for the protection of intellectual property rights are set out in the free trade agreement that stretch beyond the minimum provisions provided for in the founding treaties (Paris and Bern, cited above). So the authors of the free trade agreement clearly intended to govern the question of intellectual property rights, just as the Marrakesh Treaty does in a specific area. To say that these provisions have "direct and immediate effects on international trade" takes nothing away from either their nature or purpose.

What is clear is that the ECJ has ventured into an argumentative territory relating to movement that has been insufficiently elaborated and constructed. It can be described as uncertain.[82]

IV. The difficulties of addressing the lack of movement in legal terms

This final scenario, used here to deconstruct the law's discourse and non-discourse on movement, is somewhat unusual. Considering movement also implies, in some cases, working on the lack thereof. In such cases, what can be said of how the law has responded?

We will begin by looking at examples where there is a circumstantial lack of movement.

Circumstantial lack of movement. How do legal experts respond to a circumstantial lack of movement? We will take two examples (which are not linked!): a plane crash and Brexit.

Plane crashes, although fewer and fewer in number, raise legal difficulties even greater than those already examined and inherent in the endeavour of organising a flight, particularly between different countries.[83] It is almost as though the lawmaker's machinery that enables an aeroplane to move from A to B becomes jammed when this movement is lacking. There are many examples. We have repeatedly seen the immense challenge for all stakeholders of concentrating both civil and criminal claims before a single court, resulting in the dispute being spread out, the duration of procedures being dragged out and an increase in their cost. There is also the highly peculiar case of a veto being issued by one State (Russia) against the creation of an international criminal court following the explosion during Malaysia Airlines flight MH17 over Ukraine in July 2014.[84]

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82 For both a legal and economic analysis of this case law sequence, see our study co-authored with S. Harnay. "Dépasser le discours sur la circulation : dialogue entre une économiste et un juriste à propos de deux avis (2/15 et 3/15) de la Cour de justice (UE)", A. Boujeka, Th. Habu Groud, L. Zevounou (eds), *Les Libertés de circulation au-delà de l'économie* (Mare & Martin, 2019), p. 213.

83 See in particular, B. W. McCormick, M. P. Papadakis (eds), *Aircraft Accident Reconstruction and Litigation* (Lawyers and Judges Publishing, 2011). On the more general treatment in international law of disasters involving large movements of traffic, see S. C. Breau, K. L. H. Samuel (eds), *Research Handbook on Disasters and International Law* (Edward Elgar, 2016).

84 Security Council fails to adopt proposal to create tribunal on crash of Malaysian Airlines flight MH17 – <https://news.un.org/en/story/2015/07/505392-security-council-fails-adopt-proposal-create-tribunal-crash-malaysian-airlines>.

In an altogether different register, the case of Brexit is also an illustration of a circumstantial lack of movement.[85] Organising movement within the European area has required considerable efforts of legal construction for more than 60 years. The legal work necessary to deconstruct that movement is every bit as daunting. And legal experts are all too aware of this. As has been said, one must legislate to de-legislate! And this is no mean feat. One need simply look at the situation between Northern Ireland and the Republic of Ireland to the south of the island. It is extraordinarily difficult to reconstruct the legal regime of an external border to substitute that imagined by Europe based on the model of an internal border in a common area.

In both of these examples, it is clear that the law is placed in a situation of uncertainty. It has been constructed to address cases of movement and struggles significantly to reconstruct itself where there is a lack of movement.

Postulated lack of movement. Legal rules are sometimes intent on denying movement, including in scenarios where movement is an intrinsic part of the thing in question, as is the case for persons, data, capital and waste. This is a form of legal status in which the law postulates an abnormal situation of immobility so it can properly put in place a legal policy.

We will identify four scenarios in which a lack of movement is postulated by the law.

The first relates to migrants, whom various legal mechanisms seek to immobilise. This is true, for example, of house arrest mechanisms put in place under national regulations while waiting for measures of expulsion or relocation to be taken.[86] It can also be seen in the lack of European will to mobilise the existing instruments to enable nationals from third countries to benefit from a humanitarian visa enabling them to issue a request for international protection in the territory of a member State.[87]

The second relates to data storage requirements. Whether for the general protection of personal data[88] or data protection for security reasons[89], the law seeks to closely contain data circulation to prevent stored data from being disclosed or altered.

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85 See for example, M. Dougan (ed.), *The UK after Brexit* (Intersentia, 2017); Ch. Bahurel, E. Bernard, M. Ho-Dac (eds), *Le Brexit – Enjeux régionaux, nationaux et internationaux* (Bruylant, 2017).

86 See, for example, the numerous provisions devoted to house arrest in the French code on the entry and residence of foreigners and the right of asylum.

87 See in particular: ECJ, GC, 7 March 2017, case X. and X. v Belgian State, C-638/16 PPU.

88 Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of individuals with regard to the processing of personal data and on the free movement of such data.

89 Directive (EU) 2016/680 of the European Parliament and of the Council of 27 April 2016 on the protection of individuals with regard to the processing of personal data by the competent authorities for the purpose of the prevention, investigation, detection and prosecution of criminal offences or the execution of criminal penalties and on the free movement of such data.

The third scenario relates to the freezing of assets, another area that has seen the implementation of many different mechanisms, including in recent years some on a global scale (United Nations) as part of the fight against terrorism (so-called "smart sanctions").[90]

The final scenario is that of landfill, which has been the subject of regulations in an effort to limit the risk of dissemination.[91]

All of these scenarios should be seen as paradoxical.

By their very essence, migrants, capital, data and waste circulate, and a great many legal mechanisms address this fact.

Yet it is possible to legally counter this quasi-ontological status of movement by postulating a lack of movement. The law can defy the most flagrant realities and construct its own world, as we have revealed since the introduction above.

But you might say this comes at a cost.

All of these legal mechanisms built on the notion of a lack of movement are undermined, particularly in scenarios of total movement beyond control.

One can of course sustain legal discourse on such lack of movement and ignore the paradox.

But it is worth questioning both the meaning and scope of these uncertain mechanisms.

V. Difficulty of legally defining control

The polysemy of *control* in the presence of ordinary movement refers to all those cases in which its exact meaning is not clear when it refers to the possibility of controlling situations in movement.

Polysemy of the legal discourse on the control of movement. In everyday language, controlling movement, as indicated earlier, may mean measuring, releasing, orienting, stopping or reversing it.

But when the law uses the word "control", it is not always easy to determine its precise meaning. Does it at once cover all of the meanings listed above, or only some of them? Are there other possible interpretations?

Looking at the traditional legal corpora—doctrine, law, case law—, it is quite easy to see that this word can have multiple meanings and that it is not always easy to determine which one is intended.

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90 For a historical example: Security Council Resolution 1373 (2001) which gave rise within the European Union to Common Position 931/2001/ CFSP and Council Regulation (EC) N°2580/2001 of 27 December 2001 on specific restrictive measures directed against certain persons and entities with a view to combating terrorism.

91 See, for example, the provisions of the French environment code, which devotes several articles to the issue.

Illustrations of this can be found in many different areas in which the law endeavours to govern situations in movement. Without wishing to be exhaustive, we will look here at two developments.

The first relates to some elements of the legal corpora already identified that are specially dedicated to movement and its control in the triple context of domestic, international and European law.

The second relates to the four areas studied systematically herein: persons, data, capital and waste.

We will look at each one in turn.

Domestic context: the example of control in transport law. France's Transport Code, adopted in 2010, contains 686 occurrences of the word "control". Without wishing to study these in detail, the following observations can be made:

- the text contains numerous definitions (introduced with the expression "what is meant by…"), yet the word "control" is not defined at any point;
- "control" is used in very different ways in the Transport Code: the control body (highly frequent occurrence), the person in control of the vehicle (e.g. driver), one body in control of another within the chain of responsibility (e.g. a company controlled by another), the object controlled (vehicle, transport documents, driver, network access, etc.);
- the word "control" is only directly associated with the word "circulation" (which appears 274 times) on 20 occasions, many of which are redundant.

If we broaden our perspective, it can be noted that the word "control" is absent from the Code's index (Éditions Dalloz).

This can be easily explained: the notion of control is omnipresent in transport law, and so the word is highly polysemic, making it difficult to define or index.

Nonetheless, control is not really an autonomous legal notion insofar as it usually relates to the use of other notions.[92]

International context: the example of control in international treaties on the fight against trafficking. Many international texts have focused on illegal trafficking, i.e. the movement of goods or persons in conditions considered contrary to international public order.

These include the Unidroit Convention on stolen or illegally exported cultural objects (Rome, 1995). This relatively short instrument comprises a preamble and 21 articles.

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92 On the difficulties encountered in the exercise of control in the field of road transport, see S. Carré, "L'état du droit dans le transport routier de marchandises: une réglementation en trompe-l'œil", *Droit et Société*, vol. 46, (2000), 597.

At no point does it use the word "control". Yet that is precisely what it is about, since the purpose of this convention is to establish sophisticated procedures for the restitution or return of stolen or illegally exported cultural objects.

Although the instrument is an original text, uses the tools of both public and private law, and sets out both procedural and substantive legal rules, it fails to develop any specific discourse on the "control" of the illegal movement of cultural objects.

Control here simply underlies other notions, in particular that of the "return" and "restitution" of cultural objects, each of which has its own distinct meaning.

This situation can be likened to the many initiatives, including by the United Nations, as part of the fight against all kinds of trafficking (drugs, humans, organs, wild species, weapons, etc.) and which repeatedly refer to "control" yet fail to provide a consistent nomenclature for this concept.

This makes the discourse on control all the more variable and uncertain.[93]

European context: the example of control by the ECJ of obstacles to trade. In EU law, and particularly the laws governing the internal market, the ECJ plays an important role in controlling the obstacles to the various freedoms of movement. This is based on the compatibility test that allows it to check whether national obstacles to the free movement of persons, goods, services or capital can be justified based on various criteria.

If we take the decision-making practices of the European jurisdiction in this area as our point of reference, we note a dual contingency in the way this control is exercised. There are two duplications in this contingency: that of judges since control is very frequently exercised as part of an interlocutory procedure between a national judge and the European jurisdiction; and that of regulations given that the obstacle usually originates in domestic regulations (in the broad sense) which are then tested against the requirements of the Treaty on the functioning of the EU.

This complex configuration means that no party—national or European—has complete control over the obstacle in question. The case law generated by the ECJ is a tributary of national specificities. This state of affairs is reflected in the Court's decision-making practices by close references to domestic context in its appreciation of the obstacle. And so it is not unusual for it to write something like "… which it falls to the national judge to verify …", whereby the European judge leaves it up to his or her domestic counterpart to truly implement the compatibility check with all of the margin of appreciation that implies.

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93 On the conceptual difficulties encountered in the international fight against trafficking, see P. Chaumette (ed.), *Maritime Areas: Control and Prevention of Illegal Traffics at Sea / Espaces marins : surveillance et prévention des traffics illicities en mer* (Gomylex, 2016).

This might be termed "judiciary subsidiarity", a phenomenon that is doubtless more marked nowadays than in the past. European judges carefully weigh up their reasoning, no doubt believing that much of their doctrine on obstacles has been fabricated, and nor are they unaware of the criticisms made against their interventionism, sometimes deemed excessive by member States.

The contingent nature of the "control" exercised by the ECJ is only compounded by this. It is difficult to place the control of obstacles to trade under a single model. There are several different models with varying levels of gradation depending on the case.[94]

On control of the movement of persons: the example of quasi-nationality. The distinction between national and foreign plays a key role in the rights—especially public and political—that the different States in the world attribute to individuals. It is a tool of control over the movement of foreigners who are given lesser prerogatives than national citizens. For example, since banishment is punishable under international law, a State can refuse to expel one of its citizens but allow itself to expel foreigners.

The complexity of situations can nonetheless trouble the waters of this overarching distinction. In practice, a foreigner may have more links with a given national territory than one of its own citizens. For example, a foreigner who has been living in France for a long time and has given birth to children who then acquired French nationality has potentially greater links with its national territory than a French citizen who has always lived abroad with children who decided not to opt for French nationality.

To address such a situation, the (controversial) concept of "quasi-nationality" has been developed. This is the "small steps" technique at work. As a foreigner integrates more and more, they acquire more and more rights until such time as their status no longer really reflects the traditional split between national and foreign.

In such circumstances, it must be said that the State's control over the foreigner's movement differs from that exercised over a foreigner who has no particular links with its national soil. One might even say that this form of control is close to that exercised over national citizens. Yet a quasi-national is not a national and continues to obey certain rules specifically applicable to foreigners, particularly in terms of mobility.

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94 On the subject of monitoring barriers in internal market law by the ECJ, see L. Azoulai (ed), *Le droit des entraves dans le marché intérieur* (Bruylant, 2011). For an emblematic case of judicial subsidiarity in which the Court of Justice referred back to the national judge the task of verifying whether an internal regulation on the fixing of minimum lawyers' fees was such as to guarantee a certain level of quality of service (something which, not only falls under an economic rather than legal analysis, but, by the very admission of economists specialising in these matters, proves impossible to establish!), see ECJ, 5 December 2006, Cipolla and Macrino, cases C-94 and 202/04.

A third category can be added to the two traditional categories of control exercised over nationals and foreigners. It is one that carries its share of uncertainty. It often requires a case-by-case assessment of the situation that can make it difficult to reverse the attribution of rights close to those enjoyed by nationals and which have been acquired by a foreigner over time.

The result is that there is not one form of control over foreigners distinct from that exercised over national citizens but rather several forms of control depending on the level of integration of each foreigner as they move closer to the situation enjoyed by nationals.[95]

On control of the movement of data: the example of Europe's personal data protection mechanism. The EU's GDPR regulation[96] contains many occurrences (525 to be exact) of the word "control".

The question is whether this term carries a specific meaning in the legislative corpus or whether it is undermined by polysemy, not to say uncertainty.

To begin with, it should be noted that the word does not appear as such in Article 4 of the regulation, which is specifically dedicated to definitions. It only refers to "controllers" without explicitly explaining what is meant by the notion of control.

As for its general usage in the regulation, the word "control" at once relates to that exercised by natural persons over personal data, that exercised by the processor of said data, by national or European authorities, by other authorities (e.g. judicial) or by a group of undertakings in one form or another (e.g. health checks, improving security features, monitoring tax fraud).

As for the object of control, we can see that it varies considerably depending on the person exercising that control and the ends being pursued. Rights and duties in relation to the control of data refer at once to the prerogatives specifically granted to natural persons over the use of their data, those granted to the processor of that data and all entities that fall under its authority, those granted to supervisory authorities, etc.

Finally, specifically on the question of the control over the movement of data, the use in the text of different standards, for example "reasonable measures", "specific and suitable measures", "measures to ensure lawful and fair processing", tells us that there is no attempt to pin down the measurement, release, orientation, stoppage or reversal of movement.[97]

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95 On the notion of quasi-nationality, see with the various references cited: J.-Y. Carlier, S. Sarolea, *Droit des étrangers* (Larcier, 2016), n° 16.

96 Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of individuals with regard to the processing of personal data and on the free movement of such data.

97 On the complexity of the notion of control in this area, see Ch. Lazaro and D. le Métayer, "Control over Personal Data: True Remedy or Fairy Tale" (14 April 2015), <https://arxiv.org/ftp/arxiv/papers/1504/1504.03877>.

On control of the movement of capital: the example of the relative effect of legal acts. Legal acts naturally play a central role in the movement of capital. We can safely say that they are a major tool of control—in the sense of releasing—this type of movement, which in principle requires the consent of the person who holds the rights over the assets concerned.

This form of control exercised over the movement of capital through legal acts stands in contrast to the much more meagre possibilities of monitoring this movement. Legal acts that constrain or govern the movement of capital are subjected to the principle of their relative effect.[98] Under this widely observed principle, legal acts can only have binding effects on those to whom they apply. It follows that anyone releasing a capital flow can in general only impose a restriction on the subsequent movement of that capital on the direct contracting party. Except in situations, as in the domain of securities, where the law establishes a veritable tracing right which, as the name indicates, literally makes it possible to "trace" the capital, a legal act does not enable comprehensive control over movement of capital.

This state of affairs shows that when it comes to the ordinary movement of capital through legal acts, the term control is interpreted in two opposing ways. Whereas it is central to the moment when the capital flow is released, it is intended, except in specific circumstances, to be relinquished for subsequent movements.

On control of the movement of waste: the example of transformation via abandonment or defection. In the world of waste, the act or fact of abandonment or defection plays a central role in the way waste is defined.

When it comes to control, the law generally adopts the same analytical approach regardless of whether or not the abandonment or defection is part of a controlled procedure. At this stage of defining waste, the voluntary abandonment of waste is in principle analysed in the same way as one's involuntary defection from it.

This neutralisation of the question of control at the specific moment of abandonment or defection is pushed to its paroxysm in scenarios in which the original matter combines with others and thereby takes on new forms, without any human intervention. Such a scenario arises in land or sea pollution caused by fossil fuels, where case law, particularly in Europe[99], has led to the waste being considered as the final substance produced by the agglomeration between fossil fuels and other matter. And so the soil or sediment transformed via this contamination itself becomes waste.

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98 On the relativity of obligations, see in particular the historical analysis of V. Palmer, *The Paths to Privity* (The Lawbook Exchange, 2006).

99 ECJ, 7 September 2004, MP v. Van de Walle, case C-1/03; ECJ, GC, 24 June 2008, Commune de Mesquer (Erika case), case C-188/07.

This extended definition of waste serves only one purpose: to expand the scope of the "polluter pays" principle by placing the (distant) consequences of abandonment of or defection from the original matter—that caused the subsequent, uncontrolled formation of waste—under the responsibility, i.e. control, of the person or body behind that act.

Ultimately, we can see that control and the loss of control coincide in an almost circular fashion in this type of legal construct. Control is equivalent to the loss of control, which is ultimately analysed as an object of control!

VI. The law and the illusion of control

Looking again at the four primary examples studied herein (persons, data, capital and waste), we need to determine the extent to which the law constructs solutions of control, even when the situation is, materially speaking, out of control.

A general impression prevails: the law is often built on an illusion of control.

Movement of persons: the loss of control justifies the reinforcement of control! When it comes to the movement of natural and legal persons, the spectre of a loss of control is a powerful tool that serves the reinforcement of control.

The mere allegation, even false or difficult to verify, of a loss of control drives the creation of new initiatives, especially regulatory initiatives, intended to reinforce control.

It is rare to find cases in which the loss of control is effectively assumed in the legal discourse since, on the contrary, one only speaks of a loss of control to fuel the illusion that it is useful to reinforce control.[100]

Multidisciplinary research studies have perfectly shown the extent to which control over the movement of persons results in the permanent blurring of categories (migrants, immigrants, emigrants, refugees, asylum seekers, etc.) whose only purpose is to mask situations in which control is lost.[101]

Movement of data: the loss of control is pushed to the margins!. Much effort has been made on the movement of data to generate a climate of trust. In the different ages of the transfer and sharing of data, one can safely say that the spectre of a total loss of control has been deliberately relegated by both public and private authorities to the rank of unproductive myth.

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100 On the role of European agencies in the development of the legal discourse on external border control, see: R. Mehdi (ed.), *L'agenciarisation de la politique d'immigration et d'asile face aux enjeux de la « crise des réfugiés » en Méditerranée* (Confluence des droits, 2020), https://dice.univ-amu.fr/sites/dice.univ-amu.fr/files/public/cdd11-1_0.pdf.

101 See in particular: N. Ortar, M. Salzbrunn, M. Stock, *Migrations, circulations, mobilités – Nouveaux enjeux épistémologiques et conceptuels à l'épreuve du terrain* (PUP, 2018) ; S. Mazzella, D. Perrin (eds), *Frontières, sociétés et droit en mouvement – Dynamiques et politiques migratoires de l'Europe au Sahel* (Bruylant, 2019).

In the contemporary period, attention is naturally focused on the sharp rise in the circulation of digital data.

There is a fear of losing control, especially in Western society. Proof of this can readily be found in the examples of public mistrust towards certain tools that collect and transmit data on a large scale.

But the vast majority of legal initiatives are turning towards another approach. They are tirelessly seeking to construct a safe environment for the circulation of digital data which in the long term is expected to accompany, not to say govern, our lifestyles.[102]

Movement of capital: the assumed loss of control over capital flows is buried under the myth of control over their causes and effects!. When it comes to the movement of capital, it is also of primordial importance to establish a climate of trust, the only way to facilitate the release of capital flows.

If we simplify things to the extreme, it can be said that a climate of trust is achieved in two main ways.

The first is to strengthen the existing mechanisms for the liberalisation of assets. We have come a long way since the time when banking and financial activities aimed to closely control capital flows. The dominant model is to liberalise capital and payment methods, which drives investments and the development of economic activities generally.

This loss of control over capital flows is compensated for by a second approach: the development of robust mechanisms to control the origins of capital flows and their effects. Because it is not "politically correct" to speak of the control of monetary and financial flows as such, every effort is made to try and reassure stakeholders that there are alternative tools of control out there. This is no less than an attempt to bury the assumed loss of control over capital flows under the development of other restrictive approaches.

In this respect, it is possible to count all of the initiatives set up to address the quality of banking and financial information in circulation, the transparency of the players involved and the prudential and crisis management mechanisms in place.[103]

Movement of waste: the trend towards convergence (sometimes but not always) between the myth and reality of the loss of control! Waste may be the only domain in which the loss of control is increasingly recognised.

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102 For an outreach presentation of the loss of control hypothesis in this area, see my post, "Circulation totale : des données au-delà de tout contrôle", <https://theconversation.com/fr> (French Edition), April 2017.

103 For an outreach presentation of the loss of control hypothesis in this area, see my post, "Circulation totale : des mouvements de capitaux débridés", <https://theconversation.com/fr> (French Edition), April 2017.

Although the discourse on the effective control of movement continues to be predominant, at times we see an awareness of the need to tackle the problem at its root, by drying up the source of waste, given our inability to control its movement.

The most significant example of this is of course plastic. Faced with the scale of this movement phenomenon, the idea is gradually taking hold that we could simply ban part of its production, in particular single-use plastics.

Our total loss of control, long seen as the worst-case-scenario, relegated to the rank of myth by most stakeholders, is increasingly being accepted as a potential reality that could see a number of practices overhauled.

In this type of discourse, adopted in relation to other forms of ultimate waste, the myth and reality of the total loss of control are tending towards convergence.

But this is not a general trend. One example can be found in the so-called compensation measures that convey the idea of "zero net", i.e. compensating for the damaging effects of human action on the environment with measures that favour the environment through other human actions. This type of policy, which not only concerns environmental damage due to the production of waste, is fuelled by an illusion of control. It is because we have lost control in activity A that we try to compensate with environmentally friendly behaviour in activity B. But the loss of control persists whatever we say, even if we try to find a way to no longer speak of it![104]

104 For an outreach presentation of the loss of control hypothesis in this area, see my post, "Circulation totale : des déchets au-delà du contrôle", <https://theconversation.com/fr> (French Edition), April 2017.

Chapter 3
Rethinking Flow

In order to suggest ways to rebuild the legal discourse on movement, one must be willing to debate the a priori approach to the law (**I**) so as to review various antecedents (**II**) and different modalities (**III**) of movement.

I. Debating the a priori approach to the law on movement

It is not easy to question the a priori approach to the law. Yet it is necessary if we are to reconsider as a whole the path followed by the law in tackling phenomena of movement.

But what does it mean to debate our a priori approach?

An open discussion on the a priori approach. One ambition of addressing the notion of "a priori" is to engage in critical thinking and deconstruct/reconstruct central notions from various disciplines, in this case law.

Generally speaking, an a priori approach can be described as a presupposition underpinning our disciplinary constructs and one of whose characteristics is that it is the subject of little if any deliberation.

To put this differently, a priori approaches are the ordinary, vernacular (non-scientific) representations of the things (in the broadest sense) to which we apply our constructs. Then, when focusing our analysis on these constructs, we pay little if any attention to that earlier approach which involved making explicit our conception, perception and ordinary understanding of the things we claim to work on through different branches of knowledge, in this case legal knowledge.

There are many ways to reflect on the relationship between "a priori" and the law. Here, we will try to identify two approaches.

Adopting what could be referred to as the technician's approach, law can be seen primarily as an applied discipline built on a specific technical apparatus, equipped with its own vocabulary and methods of reasoning. If one wishes to be heard in the legal domain, one must be technically irreproachable, i.e. rigorous and respectful of the discipline's canons. This technical point of view is so important that most legal scholars make it the alpha and omega of their knowledge. From this

perspective, a priori approaches are not generally considered to exist. Legal scholars begin their analysis with the rule of law, only rarely reflecting on the existence of any ordinary conception, perception or understanding of the objects to which they apply their constructs.

The second is a theoretical approach. As in any discipline, in law we need abstract constructs to model legal practices. Indeed, the primary function of researchers is to abstract models from the real world and, where applicable, propose super models. From this theoretical perspective, it may be that legal scholars construct an a priori approach that cannot be deliberated or verified by legal techniques or practices. If we were to draw a parallel with theory in the world of science, this approach would be described as Kantian. It is clearly metaphysical and transcendental.

These two approaches may result in legal scholars adopting very different attitudes from one another. They may try to build a link between the a priori approach and the law. Or they may keep them separate and perhaps agree to study them in parallel with other disciplines. Finally, they may challenge the very existence or utility of the a priori approach in law.

If we stick to an essentially theoretical approach and, as in this chapter, take up an endeavour of reconstruction, the most interesting avenue is without a doubt the search for a link between an a priori approach and the law.

Two successive paths can be followed: one on the antecedents of movement and the other on its different modalities.

First theoretical path: working on the antecedents of movement. As we have just seen, the term "a priori" has a Kantian dimension. Without wishing to exclude this dimension in relation to movement, we need to adopt a broader perspective. And so the term "antecedent", albeit not in common usage, is to be preferred.

Without claiming to be exhaustive, to begin with let's try to formulate a few working hypotheses by drawing on established works.[105]

First, like Hans Kelsen[106], we can try to postulate that in law there are certain fundamental hypothetical norms (*Gundnorm*), which are essentially absent from discussions and which legitimise other norms. Here, an antecedent takes the form of a postulate or theoretical a priori approach that consolidates the normative edifice which, to put it simply, is built on the validation of each norm in reference to another. But this means that to validate the highest—constitutional—norm, one must refer to another norm. This is where the fundamental a priori approach imagined by the renowned Austrian theorist comes into play.

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105 While the works cited below by H. Kelsen, S. Romano, A. Reinach and F. Carnelutti have exerted an influence, sometimes considerable, on contemporary legal thought, there are few instances where they are considered together. Nevertheless, there is one remarkable exception: N. Bobbio (*Old Age and other essays* (Polity, 2001), p. 45 et seq.), who mentions the importance of his early legal reading.

106 H. Kelsen, *Reine Rechtslehre* (1934-1960). For an English version of the second edition: *Pure Theory of Law* (Lawbook Exchange, 2009).

Next, we can borrow from Santi Romano[107] and see any social organization as an antecedent that gives rise to a legal order (*ordinamento giuridico*). This author's major contribution was to introduce in law the notion of social order generally seen as an "antecedent" (he uses the term *antecedente* several times) of the law. This could of course be the social order of the State, but, rejecting any form of legal exclusivity, he agreed to open up this perspective to other types of social organization: international society, church, business, family, mafia, etc.

Finally, and perhaps this is a more audacious choice, we can draw on work better known in Germany and Italy than in France and which endeavoured to theorise an a priori, like Adolf Reinarch[108] in civil law and Francesco Carnelutti[109] in commercial law. The concepts of "possession, promise, claim and obligation", so dear to the former, and the iconic concept of "circulation" studied by the latter offer avenues that can contribute to a renewed approach to the antecedents of the law. We will return to their work later on.

All of these antecedent-based approaches have potential appeal as part of efforts to reconstruct the legal discourse on movement. Without needing to establish a hierarchy or systematise these different approaches for the purposes of this essay, it is nonetheless essential to question the existence of different types of antecedents in relation to situations in movement.

Second theoretical path: working on the modalities of movement. What is a modal approach? It is clearly an extension of the approaches based on antecedents we have just seen.

Generally speaking, the modal approach is the study of the different modalities of the law.

One can conduct an *a posteriori* analysis of these modalities based on the statements of positive law, studying the way a legal rule uses a particular process to govern a given issue. This is what most legal analysts do.

Or one can opt for a more restrictive analysis limited to an antecedent understanding of these modalities. Before the intervention of positive law, what are the modalities of the thing in question that are likely to play a role in developing its legal regime?

Only the second approach is considered here. Insofar as we are trying to reconstruct the legal discourse on movement, we must position ourselves as far upstream as possible of the constructs of positive law.

Legal theory offers two major resources for the modal approach: logic and phenomenology.

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107 S. Romano, *L'ordinamento giuridico* (1918-1945). For an English version of the second edition: *The legal order* (Routledge, 2017).

108 A. Reinach, *Die apriorischen Grundlagen des bürgerlichen Rechts* (1913). For an English version: *The Apriori Foundations of the Civil Law* (De Gruyter, 2012).

109 F. Carnelutti, *Teoria giuridica della circolazione* (Cedam, 1933).

Modal logic is a formal logic in the mathematical sense used to verify the accuracy of a proposition by varying its modalities. This can be used to distinguish between a hypothesis for which a proposition is considered necessary from one in which it is merely considered possible.[110]

This type of approach is difficult to access for a legal scholar not accustomed to handling axioms. The task is made all the more arduous by the fact that there is a great variety of modal logics depending on the essence of the modality being considered.

But it is nonetheless an appealing approach. It can be used to account for the possibility of a legal statement, which can be particularly useful as part of our endeavour to reconstruct the legal discourse on movement.

Another option in the modal approach is to rely on phenomenology.

The phenomenological a priori approach was developed in particular by Adolf Reinach (whose work is cited above[111]), who studied under the father of phenomenology, Edmund Husserl.

In his work, this author developed an ontological vision of the a priori approach. He addressed the essence of the realities of civil law, which he re-sketched based on four a priori concepts (possession, promise, claim and obligation), which do not depend directly on the statements of positive law. In a word, Adolf Reinarch sought to offer a theoretical and immanent characterisation of a model of facts or phenomena typical of the intervention of civil law.

Often criticized for its ontological dimension, the analysis of Adolf Reinarch is very suited to an analysis of modalities upstream of the law's intervention.

In terms of movement, we must try to retain the method while avoiding the essentialist pitfall that all too easily exposes an analysis to criticism.

II. The different antecedents of movement

What are the antecedent perceptions, understandings or conceptions of movement that can be developed here? Is it possible to establish a typology? To what extent do they borrow from disciplines other than the law? To what extent are they destined to be integrated into the constructs of the law?

Each of these questions potentially has many answers that can of course vary depending on the period or environment being considered. Without claiming to be exhaustive, five antecedents will be studied here.

110 See for an introduction to this method, B. F. Chellas, *Modal Logic – An introduction* (Cambridge University Press, 1980).
111 A. Reinach, *Die apriorischen Grundlagen des bürgerlichen Rechts*, *op. cit.*

The non-exhaustive choice of five different types. The research journey that led to this text explored many different discourses on situations in movement, some more specific to legal experts while others came from different branches of knowledge. But all of these discourses reveal a certain number of antecedents of movement that could potentially be of interest to legal scholars.

By definition, antecedents retain some of their secrecy. And so one cannot aim to unveil them completely, but it is worth trying to name them explicitly with a view to discussing them.

Here are the five we will be looking at:

- the magical antecedent of movement;
- the liberal antecedent of movement;
- the social antecedent of movement;
- the ontological antecedent of movement;
- and the fundamental antecedent of movement.

These different antecedents are not necessarily compartmentalised. The examples chosen can sometimes fall under several different categories. Some examples are ever-present in the minds of legal scholars, while others are considered only of marginal importance.

The magical antecedent of movement. It is not unusual for the law to adopt a metaphorical discourse on movement.

The imaginary, in the broadest sense, i.e. everything that generally stems from the imagination (and not strictly speaking from images), holds an important place in the unconscious thinking of the law.[112]

This imagination can take the form of metaphors, used somewhat like magical thinking (in the non-pathological sense of the term!) to refer to exalted potentialities.

One encounters this type of metaphor in all areas of the law, including the law on movement.

Movement may be invoked in legal discourse in reference to salutary virtues, used to justify a particular orientation, sometimes deep-rooted, of legal analyses.

Metaphors can be used somewhat mechanically and repetitively by legal scholars without any real discussion. And when they are discussed, it is generally to identify their metaphorical—not strictly legal—nature.

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112 See for example: S. Stern "The Legal Imagination in Historical Perspective", in A. Amaya, M. Del Mar (eds.), *Virtue, Emotion, and Imagination in Law and Legal Reasoning* (Hart, 2020), 217; M. Doat, G. Darcy (eds), *L'imaginaire en droit* (Bruylant, 2011).

In any case, metaphors are present and continue to occupy a position that could hardly be said to be marginal in legal constructs.

We will now look at three examples in different legal environments:

– the emphatic discourse on "mobility" in domestic or European legal mechanisms to explain, for example, the changes at work in the law's approach to urban and inter-urban transport or the creation of new spaces (internal market, freedom, security, justice) within the European Union;
– the discourse on the "imperatives of international trade" in international legal mechanisms to justify, for example, the principle of autonomy and validity of arbitration clauses in international arbitration;
– references to a "bridge" to explain how the law can establish connections between one legal system and another, for example the relationship between the international order and domestic legal orders, or when a domestic court applies foreign legislation.

The liberal antecedent of movement. This antecedent plays an important part in the peripheral constructs outside the law. Movement, understood in its broadest sense, is presented as a truly liberal project with political, philosophical and economic dimensions.

This multifaceted liberal thinking has a very ancient dimension that has penetrated a considerable number of thought systems and has been passed down through very different epochs.

Understood in its economic—commercial—sense, movement is that which allows territories to link up and create new political and social spaces.

In legal terms, this extension beyond the territorial framework (national or local, for example) results in a kind of release from the public territorial order in place. It is a *laissez-faire* approach involving more or less free movement depending on the political, philosophical and economic inspiration underpinning the context in which the movement unfolds.

And so it would be difficult to argue that liberal thinking, as an antecedent, has not played a key role in the legal constructs on movement.

This raises the question of the extent to which these theories have managed to imbue movement with real substance, real content.

One of two things is true. When the law draws on a liberal antecedent, either we can argue that, in terms of movement, it is leaning on a particularly robust structure, or on the contrary, that the dominant impression is one of a void, a kind of leap into the unknown.

This is a central question, and to answer it we have no option but to question the liberal antecedent.

This is done in many disciplines (in particular political philosophy, economics and sociology).[113]

It is also done in law.

The social antecedent of movement. Under this third example, the link is established between society in movement as an established fact and the law. This is the hypothesis that society in movement—meaning society as an agent of the movement it provokes and organizes—fabricates its own law.

There are several examples, but we will look at two key ones here.

The first is that of trading companies, of which it has been said that they could constitute their own legal order, producing legal rules (the term often used is *lex mercatoria*[114]). Of the different rules to have emerged from the practices of stakeholders, some are closely linked to movement. This is true for example of the modelling of contractual terms forged through the practice of the international sale of merchandise and international transport contracts. This modelling was codified in the 1930s by the International Chamber of Commerce (Paris) under the name "Incoterms", and these have been regularly revised, with the latest change made in 2020.

The second case is that of the mafia. To engage in trafficking, different rules are put in place by organised crime networks, and these may lead to a specific legal order. These rules include the "road law", which plays a key role in the smooth running of operations. It establishes the routes in the different territories, settling the question of any rights of way and resolving conflicts within a trafficking space where several routes coexist.[115]

In both of these very different situations, establishing a link between the social antecedent—the trading company or organised crime network, understood as agents of movement—and the normative constructs specific to the law is particularly relevant.

The ontological antecedent of movement. Under this fourth approach, movement is considered as the legal essence of a certain number of objects of the law.

To appreciate this legal essence of movement, it is worth drawing on the theory developed by the Italian legal scholar Francesco Carnelutti whose work is cited above.[116]

Francesco Carnelutti was a prolific and renowned author (it is still common in Italy to say "not everyone can be a Carnelutti!") who looked at questions of both legal theory and practice.

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113 For a critical questioning of the non-contribution of liberal thought to the construction of content on the freedom of movement: H. Kotef, *Movement and the Ordering of Freedom – On Liberal Governances of Mobility* (Duke U. Press, 2015).

114 For a recent overview, see O. Toth, *Lex Mercatoria in Theory and Practice* (Oxford University Press, 2017).

115 On the road law defined by mafia orders, see D. Villegas, *L'ordre juridique mafieux – Étude à partir du cas de l'organisation criminelle colombienne des années 1980 et 1990* (Dalloz, 2018).

116 F. Carnelutti, *Teoria giuridica della circolazione*, *op. cit.*

His *Teoria giuridica della circolazione* looked at debt securities, and in particular at the bearer instruments in circulation by endorsement back then. The point of departure for his analysis is none other than movement, or circulation, which the author describes as an economic notion that raises a certain number of legal questions. This implies it is an antecedent, although the author himself preferred the term presupposition (*presupposto*). Carnelutti goes on to offer a legal analysis of circulation in reference to three major subjects: contracts (section 1), appearance (section 2) and legal security (section 3). The core of his analysis is to be found in the section on appearance. He explains that there are different indices of circulation: the material handover of a security, its materialisation in document format, its communication and its publication. Considering the legal relevance (*rilevanza giuridica*) of these indices, the primary—and totally original—point of his analysis is the view that, for debt securities, the appearance of circulation is a way to circumvent the traditional split between consensual, literal and real contracts. It is the appearance of circulation that creates rights over the security, especially in cases where such rights cannot be established using other means (essentially consent or the legal tradition of materially handing over the security). In other words, a security's potentiality of circulation is the primary and essential presupposition for any transfer of ownership, in whatever form.

Carnelutti's analysis is clearly antecedent and ontological. By identifying circulation as the primary legal hold over securities, he establishes an essential legal link between this antecedent of movement and the multiple legal processes for claiming such securities.

The fundamental antecedent of movement. The fifth approach adopts a perspective of movement as the foundation of a legal system.

The right to come and go as one pleases, free trade and the freedom to conduct business can be approached as antecedents with a fundamental dimension that contribute to the birth of liberal legal systems, State systems in particular. The presupposition of a national legal system can be built on the assertion of a certain number of fundamental freedoms, which may reflect a logic of free movement (including the dissemination of ideas, expressions and information, as well as the movement of persons and goods, etc.).

To illustrate how movement can be the foundation of the legal system, let's look at an example other than that of the liberal State: the quite remarkable experience of the European communities that went on to form the European Union. Looking at what used to be the EEC (European Economic Community) or the ECSC (European Coal and Steel Community), one notes that these new legal spaces were almost exclusively built on the freedom of movement. The arsenal of fundamental freedoms (such as that proclaimed in France in 1789) did not herald the construction of these different European communities; for that we had to wait until the 1970s, when the market-based Europe began to acquire the legal tools guaranteeing fundamental rights, which were only completed in 2000 with the European Union Charter of Fundamental Rights. And so it is essentially the economic freedom of movement that lies at the origin of the European communities.

This freedom constituted a fundamental antecedent of the construction of this new European legal system.

According to the neofunctionalist theories in force at the time, it was essential to open up economic borders between founding States to create forms of solidarity between them that would feed a shared political project of ascending and descending integration: from member States towards the common structure and vice versa.[117]

The four freedoms of movement—persons, goods, services and capital—are clearly of fundamental value. This fundamental dimension of movement has been extensively studied by specialists of European law. And it has rattled quite a few non-specialists. One of the reasons for their incomprehension is clearly that the reach of the fundamental antecedent of movement has not always been understood. Too polarized and too different to the other models at work in domestic and international law, it was often underestimated in terms of its potential to transform the existing rules. Things have moved on, although at times there has been debatable over-emphasis on European movement, portrayed as a blessing.

At any rate, it is important to understand the fundamental antecedent of movement in all of its complexity and try to appreciate its full ontological reach.

III. The different modalities of movement

What are the modalities of movement that can drive legal constructs? Is it possible to establish a typology of these modalities? To what extent can we try to refresh the existing analyses?

Extending what we have already seen on the subject of antecedents, each of the questions addressed above potentially has multiple answers, which will of course vary depending on the period or environment concerned. Once again without wishing to be exhaustive, we will look at three main modalities (A) which can be broken down into the movement of persons (B), data (C), capital (D) and waste (E), which we have already had the opportunity to study in the context of total movement phenomena (see Chapter 1).

A. The non-exhaustive choice of three different modalities of movement

There are three antecedent modalities that merit our attention as we try to reconstruct the law on movement:

- modality of movement in and of itself;
- transformative modality of movement;
- modality of movement as a space of flows.

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117 For a presentation of the political and economic presuppositions of European integration, see in particular E. Haas, *The Uniting of Europe: Political, Social and Economic Forces*, 1950-1957 (Stanford University Press, 1958).

Movement in and of itself. The first modal approach to movement is to distinguish between cases in which the law tackles situations in movement from a consequential perspective, i.e. looking at its causes and effects, or in and of itself, i.e. from end to end.

When the law adopts a consequential perspective of movement, it focuses on managing its causes and effects. This is what the vast majority of legal rules do, focusing solely on the cause (origin) of movement or its consequences (usually when it has already taken place). Under this approach, movement as a phenomenon includes a series of successive events which the law tackles partially or separately.

In terms of causes, the law looks at everything prior to the movement of the person or goods (*lato sensu*): securing an identity document granting the right to travel or the authorisation to leave one territory or enter another. The internal, international or European dimension of the travel, as well as the reason for it (professional, personal, involuntary or forced, etc.), play a very important role in identifying the rules that are applicable and those that apply in a fragmented manner to the movement in question, depending on the person or thing concerned.

As for the effects, the law traditionally looks at whether or not the crossing of a border (*lato sensu*) between two territories by a person or thing (*idem*) changes the way it is to be dealt with legally, with all of the advantages and disadvantages that implies in terms of movement. The goal behind the movement may be to establish a legal scenario in the long term or, on the contrary, change it profoundly.

Under a whole other approach—seeing movement in and of itself—, the law endeavours to consider movement from end to end. In situations involving several territories and/or spaces, this means developing a truly comprehensive approach. Such a scenario is more demanding than the previous one. To understand a situation in movement in its entirety, one needs a legal construct of a level generally more elaborate than if addressing it from a consequential perspective.

Think of all the legal mechanisms that enable the end-to-end organization of the movement of a person or thing (in the broad sense) from one territory to another or within a shared space of movement. Such mechanisms can exist on all levels (local, national, international, regional or global). And as soon as they relate to situations across several different territories and/or areas, they are necessarily based on rules that have been coordinated and harmonised, perhaps even unified.

There is no shortage of illustrations of these two major categories of rules.

What counts is to be able to determine precisely whether the law is endeavouring to adopt an approach based on a consequential perspective or dealing with a situation in movement in and of itself.

The transformative effect of movement. This modality, generally speaking, is about the potential of movement to have a transformative effect on the legal nature of the thing moving.

When an object of the law—broadly speaking (person or thing)—is in a state of movement, is it possible to distinguish between two of the main modalities of movement, that which does not affect its legal nature and that which, on the contrary, transforms it?

The first approach is to consider that the object in question remains intangible in terms of its principal legal characteristics, whether or not it is in a state of movement.

The second is to advocate for the recognition of a transformative effect on the legal nature of the object in movement.

Both can of course be adopted depending on the object in question.

Although this transformative modality is not a criterion of distinction commonly used by legal scholars, it is worth exploring through three different avenues.

The first is to point out that certain legal regimes have been established specifically in relation to objects in a state of movement. This is true of transport regulations found at all levels (local, national, international, regional and global). It is also true of the rules governing the movement of persons (refugees or nomads), which are also underpinned by specific schemas. In these situations, we need to ask whether, in relation to the movement, there is a veritable antecedent that can justify approaches that potentially derogate from the generally applicable rules.

If such a modal antecedent does exist, then the analysis must be extended further to explore a second avenue. One can ask whether movement might be a factor of unification between legal rules. For example, the law has distinguished between different modes of transport (road, maritime, railways, air, waterways) to develop several distinct legal regimes. If the modal antecedent of movement is placed at a very high level of legal construction, then one can test the hypothesis that there are rules common to all forms of movement.

The third avenue is to question the ways in which movement can have a transformative legal effect. If an object of the law sees its legal nature modified under the effect of movement, it implies that movement is an essential characteristic of that object. Let's return to the distinction, referred to several times already, between individual and mass movement. One can ask whether there is a different legal regime for these two types of movement. If so, that raises the question of whether movement has a transformative effect on an individual object which, while moving, combines with others thereby forming a new—mass—object.

Movement as a space of flows. To say that one modality of movement is to form a space of flows is to try and reunite space and time under a single antecedent approach.

Movement has an undeniable spatio-temporal dimension. In essence, persons and goods (*lato sensu*) move through time in territories and spaces.

And so it is interesting to try to reunite space and time as part of a single antecedent notion. This brings us to the term "space of flows"[118], presented in more factual terms earlier.

Under this type of theoretical approach, movement is seen in unit terms rather than, as is traditionally the case, in the plural, by distinguishing between the different times and places of movement.

But this is not always possible. There are certain prerequisites for such a unit-based approach.

These may be of a phenomenological nature. The phenomenon of movement, its homogeneity and stability can allow us to observe the advent of new spaces of movement which the law can try to address as such. In this first scenario, it is fact, or reality, that creates the abstract model from which we will try to imagine the law's constructs. For example, it may be interesting to develop the notion of a border zone in order to think in legal terms what life might be like around the border in terms of units.

These prerequisites may also have an essentially logical dimension. Movement can be the product of a legal rule which, pushed to a certain degree of perfection, can create conditions of homogeneity and stability that are conducive to the advent of a new normative space. In this second scenario, it is the law that creates the model of realities to which it is intended to apply. For example, Europe gave rise to spaces of movement: the internal market and its area of freedom, security and justice. Within these spaces, through a number of highly diversified rules, the law postulates the emergence of a legal space of movement.

These two approaches run up against a multitude of potential obstacles. The unit for a space of flows is not always a given.

Reality on the ground experiences upheavals, crises and fissures that can cause one to doubt the existence of a sufficiently homogenous and stable space.

The law also faces situations of crisis, extreme cases that can cause one to doubt its capacity to prescribe the emergence of a legal space.

A space of flows must not therefore be seen as a purely postulated and disembodied model. It is a modality that can serve as a matrix for legal constructs. And if these constructs become tangible in ordinary or more extraordinary situations, the space of flows can become a truly normative space.

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118 For a conceptualization of the "space of flows" as opposed to the "space of places", see the work of sociologist Z. Bauman, *Liquid Modernity* (Polity, 2000).

B. Applying the modal approach to the movement of persons

When it comes to persons, the most appropriate vocabulary to speak of movement is that of mobility, even though such mobility can coincide with the movement of legal acts or facts.

The modal approach to the mobility of natural persons can potentially feed into three forms of analysis: the identification of mobile persons, mobility as a factor in the transformation of persons, and personal mobility understood as taking place in a space of flows.

Identifying mobile natural persons. The approach in itself to the movement of natural persons involves the legal work of identifying mobile persons.

In liberal societies, the law postulates the mobility of natural persons. The right to come and go as one pleases has been laid down in a certain number of domestic legal orders, and mobility serves as a vector for many public policies, particularly in transport. International law has proclaimed the right to move freely, to leave one's country and return. EU law has laid down a fundamental freedom of movement, it is sometimes held that the law of the European Convention for the Protection of Human Rights and Fundamental Freedoms encourages circulation. The law also defines a multitude of technical mechanisms designed to organise the movement of persons, particularly in its international or European dimensions.

Yet all of these mechanisms are far from giving the mobility of natural persons its full amplitude.

The right to come and go as one pleases is not of central importance in the various national legal systems.

The reference by Italian legal scholar Mancini to "[…] one of the primary faculties of man, the faculty to settle where he desires, without being constrained […]"[119], which he made prior to the adoption of the 1948 Universal Declaration of Human Rights (Article 13[120]), does not have any legal value with a general and universal scope.

The EU's free movement of persons is conditional, not absolute and, when it comes to the most debated (i.e. most interesting) points, subject to a case-by-case appreciation that is incompatible with the *ex-ante* assertion of a moving status. One cannot (as is sometimes done) refer to it generally to justify its aggregation with the attributes of persons, without considering the strict conditions for its implementation.

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119 P.-S. Mancini "De l'utilité de rendre obligatoires pour tous les États, sous la forme d'un ou de plusieurs traités internationaux, un certain nombre de règles générales du Droit international privé pour assurer la décision uniforme des conflits entre les différentes législations civiles et criminelles", *Journal du droit international* (1874/2), p. 294.

120 "Everyone has the right to freedom of movement and residence within the borders of each state. Everyone has the right to leave any country, including his own, and to return to his country."

The European Convention for the Protection of Human Rights and Fundamental Freedoms does not lay down a veritable right to move within a transnational space and, at best, sketches out a form of protection for the legitimate expectations of petitioners.[121]

In light of these various observations, which are a bit reductive of the mobility of natural persons, it may be interesting to try and imagine scenarios in which the introduction of a modal approach could be used to place the identification of mobile persons at the heart of legal questions.

Let's return to a significant example: overseas surrogacy.

Acting as a surrogate mother in a foreign country is a process marked by the incapacity of institutional or private stakeholders to make any claim of being able to prevent the reality of practices abroad. The desire to have a child is such, and the concrete processes involved in achieving it are so numerous and organised, that it is impossible to subject this reality to the interplay of effective legal rules designed to contain it. This raises the question of what such a state of affairs produces. Of all the explanations one might put forward (insufficient effectiveness of legal rules, increasing commercialisation of the human body, weakening of domestic choices in the face of the European bloc, movements favourable towards the progress of "globalisation"), there is one that is of central importance: the movement of the child born from overseas surrogacy. Everyone is in agreement that outsourcing the surrogacy process to another country takes a particularly dramatic turn due to the presence of the child born through surrogacy in a territory other than that of her new parents and her travel to a territory other than that of her surrogate mother. The child's geographic situation becomes a key question in the way the law addresses overseas surrogacy. For if the parents can successfully make the child's movement the foundation of a viable legal claim, each day that passes in which emotional bonds between them are created makes the return of the child less and less conceivable (especially if there is a biological link between the child and one of the new parents). Similarly, if the child does not travel after her birth or is moved for only a short duration, the overseas surrogacy process undertaken can more easily be brought to a halt. To address this reality, we need to consider the possibility for the law of making the movement of the child born from surrogacy overseas its central concern. But such a consideration would involve a more elaborate level of legal construction than that suggested by a doctrine which pushes the act of movement outside the scope of the law. Such a requirement presupposes, first of all, an in-depth process of reflection on all the ramifications of the right to movement. What are the legal underpinnings of such a right? How can the law effectively be constructed to address this movement? To answer these questions, the modal approach is useful. As indicated earlier, it is about distinguishing between the relevant and less relevant modalities of movement as the law seeks to accompany (or not) the practices of overseas surrogacy.[122]

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121 See: P. Kinsch, "Les fondements de l'autonomie de la volonté en droit national et en droit européen", in A. Panet, H. Fulchiron, P. Wautelet (dir.), *L'autonomie de la volonté dans les relations familiales internationales* (Bruylant, 2017), p. 23 et seq.

122 See: "Contextualisation et circulation des situations : approche modale des phénomènes de gestation pour autrui à l'étranger", *Journal du droit international* (2018/1), 3.

The transformation of persons through mobility. Under a modal approach, saying that mobility transforms a natural person is to place that mobility at the heart of the definition of the very legal status of a person.

What does positive law tell us?

The answers vary from one domain to the next.

For example, if we consider, in all forms of the law (domestic, international or European), the question of the legal status of intrinsically mobile persons, we can quite easily observe that in such situations mobility has a modal function. Whether we are talking about mariners, hauliers, flight personnel, barge crew, carnival organisers, nomads, travellers, etc., for all of them, mobility is the foundation of their particular status.

But in other cases the analysis can be different. For example, when it comes to the political, civil and economic rights granted to individuals, the law quite often endeavours, to varying degrees, to preserve the existence of a status acquired in one's home country so that the individual is not entirely dispossessed of that status as soon as they cross the border. This is especially true of human rights. Fundamental rights and freedoms have been broadly defined from a universalist perspective, whatever the context in which mobile persons find themselves.

In these situations, mobility is not questioned systematically as a modality that can transform persons.

Is it possible to open up such a view?

To assess the potential transformative effect of mobility, we can look at an example taken from European law.

This example builds on the hypothesis that the law seeks to multiply its constructs depending whether it is addressing personal mobility as a unitary or mass phenomenon. We are talking about the range of discourses that have been heard, especially in Europe, since the 2015 migrant crisis linked to the war in Syria. To try to cope with the crisis, various mechanisms were imagined that could deal with the "mass" of persons in circulation.[123] This type of discourse breaks from the legal tradition centred on a strictly individual approach to persons, particularly in terms of the status of refugees and asylum seekers. To explain this departure, one might wonder whether the nature of mass movement is such as to give rise to a new legal object—the mass of persons in a state of movement—which, without replacing the individuals of which it is made up, could be made distinct with its own unique approach.

123 Council Decision (EU) 2015/1601 of 22 September 2015 establishing interim measures of international protection for the benefit of Italy and Greece, which has repeatedly referred to the 'mass influx of third-country nationals'.

This analysis may shock some, who see it as a means to regulate mass migration and annihilate individual rights. But it can also be analysed as a way to enrich legal approaches while respecting the principles already in place. The law is willing to make mobility a factor in the transformation of someone in movement. As an individual, this person retains their rights as a mobile agent. As a unit that belongs to a moving mass, they see new rules applied to them, specific to the way the law addresses mass phenomena.

Persons in the space of flows. Can the mobility of natural persons belong to a space of flows?

Of all the modalities explored above, the space of flows is the most elaborately constructed.

It should be remembered that it refers to situations in which a potentially large number of rules or decisions, sometimes highly heterogeneous (public, private, national, international, European, binding or non-binding, etc.), come together to enable movement to take place.

In the context of the movement of natural persons, it is an expression that is not used.

But is it possible to tweak the existing analyses?

When a modality of mobility is a space of flows, this implies, from a legal perspective, a more central role for the notion of space and the relegation to the background of equally important notions like territories (in the broad sense) and the crossing of borders (*idem*).

In such cases, one can speak of a normative space of flows. It is the flow that determines the contours of a legal order, and this is only possible if movement is made central to the legal mechanisms put in place.

Such a situation does not exist (or is difficult to imagine) at macro-legal levels.

On a global scale, it has been shown that the very idea of movement in the context of migration is being eschewed.[124]

In the European (EU) and national contexts, we have already seen that the notion of space is understudied from a theoretical point of view and that the correlation between space and movement is far from systematically established.

We must therefore instead look at micro-legal levels and ask, for each type of movement and each type of situation, whether or not the notion of a normative space of flows is a characteristic modality that can help explain the processes at work.

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124 On contemporary forms of this denial of movement, see J.-Y. Carlier and F. Crépeau, «De la 'crise' migratoire européenne au pacte mondial sur les migrations : exemple d'un mouvement sans droit», *Association française de droit international*, vol. LXIII (2017), 461.

Journey completed, refuge or asylum granted, return organised, extradition effective … in all of these cases, it is possible to link up the different legal mechanisms at work in terms of the normative space of flows accomplished. The fragmentation of territories and the crossing of internal and external borders continue to exist. But they have been defeated by the convergence of different legal methods and solutions to address a single phenomenon: movement. And this only works if one of the modalities of that movement is the formation of a normative space of flows.

Referring to a normative space of flows is also relevant whenever it is undermined by the logic underpinning the fragmentation of territories and the crossing of borders. It shows how the situation has failed to construct itself based on a characteristic modality of the completed situations in movement.

Other more specific types of normative spaces of flows can also exist. One example is border zones, which have sometimes been seen as legal orders in their own right and within which absolutely polarized practices have developed in relation to the movement of persons.[125]

As we can see, reliance on the notion of a normative space of flows can be extended.

C. Applying the modal approach to the movement of data

As in the case of persons, the modal approach to data circulation can potentially feed into three forms of analysis: the identification of data in circulation, its transformation as a result of that circulation, and approaching it in terms of a space of flows.

Identifying data in circulation. To what extent can the context of movement, or circulation, be used to revisit the law's key constructs in the domain of data?

The law on data has been largely structured around the way data is organised. Data is broken down into different categories and a specific legal regime associated with each one.

Among other examples already referred to above, the following distinctions can be made in the European context:

- data covered under the protection of privacy, a domain which itself is made up of different regimes depending on the level of data sensitivity (e.g. medical data);
- data not protected by any rights, which are not covered by a protection regime;
- data collected and used for policing or judicial purposes;
- data intended to be used in the fight against terrorism, collected in air transport (PNR).

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125 For a transnational approach to police practices in particular around the border and the emergence of the space of flows, see B. Bowling, J. Sheptycki, Global Policing (Sage, 2012).

Many different readings can be proposed to analyse—and especially compare—these different legal regimes, which can of course vary significantly from one regulatory context to another, although here we will focus on EU law, which has a crucial influence on French law.

The question is whether approaching this from the perspective of movement sheds any light on the reading of these regimes generally proposed.

There are two main points to be made in this respect.

The first applies to all regimes. Through these various mechanisms, the law seeks to organise the conditions for the "legal" circulation of data. And circulation is truly a common denominator for all these mechanisms, even though they are very different from one another.

This general a priori approach to movement, common to all regimes, has been understudied by legal doctrine, despite its abundance on this issue. Most interesting is to study the different regimes and the question of how they interact, which is of course crucial. But the fact remains that the circulation of data is not a central or anchor point for them.

This could change, however, and this is the second point to be made. An approach based on movement offers a very interesting reading of the paradox underpinning the most important of these regimes: the much celebrated GDPR, designed to protect personal data. Although this regulation has a framework dimension—it is the common law regime applicable by default to special regimes—and although it essentially is based on the consent given by individuals for the collection and use of their data, it actually organises the circulation of data on a greater scale than that organised by derogation for policing or judicial reasons or to combat terrorism. The parties authorised to collect and use data by derogation are much fewer in number than when it comes to the processing of personal data. The mass of data in circulation affected by the special mechanisms cannot be compared to that produced under the framework of the general common law regime.

These observations should make us think about the place given to data circulation in these respective mechanisms. This is what justifies the modal approach, asking *a priori* about the effects of freeing up data caused by these common law and exceptional regimes.

The transformation of data through movement. The modal approach can sometimes involve observing the transformation of data through movement.

Most of the legal regimes addressing the question of data focus on the legal treatment of each unit of data, with as many legal regimes as there are different types of data: personal, sensitive, secret, public, royalty-free data, etc.

The formation of large databases is an essential characteristic of our digital society. The most frequent occurrence of the word "mass" in this context relates to big data.

It is possible to imagine a specific legal regime for big data.

But such a regime does not really exist.

One of the explanations for this is the "non-rivalrous" nature of data as understood by economists. It is generally believed that the use of data does not alter its substance, which can be reused indefinitely, without ever losing its essential properties. This non-rivalrous quality gives data a form of stability. This is probably why one does not generally look for any factor of potential transformation of data in its circulation.

But is it possible to bring about a change?

To answer this question, we will once again focus on the legal regime applicable to data in Europe.

The qualifiers "massive", "mass" and "large-scale" are recurring in the discourse on personal data: one hears about masses of data, mass data collection, large-scale processing or mass surveillance. In fact, the new difficulties we face in this area are largely linked to the high volumes of personal data at stake. Yet this notion of mass or quantity does not seem to have been theorised in the law on data.

In an effort to counter this, it may be interesting to establish a link between the formation of masses of data and the phenomena of their circulation.

The formation of a "mass of data" is intrinsically linked to its circulation. These masses are formed because the data circulates and their formation in turn facilitates the circulation of data.

The a priori approach to movement could herald the possibility of rolling out legal regimes specific to these masses of data. This would imply no more and no less than considering the circulation of data as having a transformative effect on data.

This perspective can be used to re-read the constructs of positive law in relation to personal data.

Two mechanisms of the General Data Protection Regulation (GDPR) come to mind in particular. The first addresses impact analysis, conducted prior to personal data processing. Criteria are identified in the relevant texts to guide data processors on how to evaluate the risks inherent in their activity. These include emphasis on "large-scale processing", determined by the number of persons involved, the volume of the data being processed, the duration or permanence of the data-processing activity and its geographic scope. The second mechanism relates to the principles that govern data collection, such as proportionality, purpose and data minimisation. If interpreted to the letter, these principles are binding and the promoters of big data have denounced them as an encroachment on innovation and as a penalty against the European data industry. The spirit of big data is to accumulate as much data as possible so it can subsequently be used for various purposes, not foreseen at the time of collection; in short, it is about "data maximisation". These mechanisms to ensure data processors

evaluate their own impact and limit their activities are not specific to mass data, but they are particularly applicable in this area. *De lege lata*, we can see the early shoots of a law to govern masses of data. By transformation, these masses display a specificity in relation to the traditional unit-based approach to data and justify the implementation of additional mechanisms.[126]

The space of data flows (datasphere). Can data circulation be said to fall under the space of flows?

When it comes to data circulation, the law sometimes specifically addresses the flow of data.

This is the case of the mechanisms outlined above in relation to transatlantic flows of personal data between Europe (EU), the United States and Canada.

More indirectly, the flow of data can be tackled through the question of the territorial scope of legal mechanisms like the GDPR, which generates effects far beyond the external borders of the EU.

These various subjects are generally examined through the traditional prism of territories and the crossing of borders. And so there are lengthy discussions about the ever-present (but frankly not very new) question of the extra-territorial scope of legal mechanisms and the capacity of a model (in this case European) to influence others around the world (the "Brussels effect"[127]).

This raises the question of whether there would not be greater clarity by moving beyond these analyses and introducing in law the concept of the space of flows, in relation to data, which could be referred to as the "datasphere". This in turn would raise the question of whether such a space could be seen as a veritable normative space.

The development of information and communication technologies, smartphones, the many different sensors now found in public and private spaces, etc. has contributed to the digitalisation of considerable quantities of data about human activities, and more generally about the world around us. It is now believed that the volume of data is growing exponentially, following a pattern similar to Moore's law, which in 1965 predicted a twofold increase in the capacity of computers every 18 months. Data, closely linked to the algorithms that bring it to life, forms a new space, the "datasphere", a kind of reflection of the physical world in which we find a trace of our physical activities, such as our geographical position at a particular instant, our exchanges, the temperature in our homes, financial movements, the displacement of goods, road traffic, etc.

This digital sphere allows us to create activities that did not previously exist. This is the case of search engines, for example, which allow us to access knowledge. But it also allows us to transfer into the digital sphere activities that were previously managed by stakeholders in the physical world. This is the case of mediation (Uber) in transport activities, for example.

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126 See also our explanation in J.-S. Bergé, D. Le Métayer, "Phénomènes de masse et droit des données", *Communication Commerce Electronique*, Issue 12/2018, Study n° 20.

127 On this concept, see A. Bradord, "The Brussels Effect", *North-western University Law Review*, vol. 107 (2012), 1.

To be seen as a new space, the datasphere must be considered from a holistic perspective, as an order made up of all of the digital data in circulation.

The prospect of a new space offers the chance to address a looming concept but which is so far absent from the literature, despite having the potential to help us better understand the relationships likely to form in this sphere of data.

These relationships come in two forms. One can envisage a scenario in which the datasphere leads to the emergence of new relationships with the traditional institutional territories (States, cities, international and regional organizations, etc.). One can also imagine the datasphere giving rise to a new normative space of flows.

The new relationships with the traditional institutional territories brought about by the datasphere emerge from a phenomenon of detachment from these territories. Realities are captured by data. The collection, processing and circulation of that data in electronic form then create situations that are detached from the traditional territories. Data generates value that is separate from that of the physical resource itself. Once that data circulates within its own sphere, it generates a new relationship with the traditional institutional territories.

This peeling away from the traditional institutional territories in particular raises the question of maintaining the existing legal mechanisms that allow a link to be established between the situations that the law claims to govern and the territories that produced the law. In order to locate a situation within a global space made up of several different territories, the law defines rules of spatial applicability that lay down a link of attachment between the rule of law as produced by a given normative power (State, city, international or regional organization) and tangible situations. This link is based on highly diverse location criteria: these criteria can be factual (location of a thing or person within a given territory at a given time) or the result of a legal construct (nationality, domicile, registration).

But they are altered from the perspective of the datasphere. If there is no longer any attachment to the traditional institutional territories, one must re-hash the criteria or come up with new criteria for the attachment between the situation in question and the rule of law to apply.

In reality, we need a concept with which to address—*a priori*—the relationship between the space of data in circulation (what we are calling the datasphere) and territories in the traditional sense of the term. Without such a concept, we will continue to approach data circulation solely through the prism of territories, State territories in particular. And there comes a time when that simply no longer works.[128]

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128 For more developments on this topic, J.-S. Bergé, S. Grumbach, "The Datasphere and the Law: New Space, New Territories", in M. Marinho and G. Ribeiro (eds), *Direito e mundo digital*, *Revista Brasileira de Politicas Pública (online edition)*, vol 7-3 (2017), 3.

D. Applying the modal approach to the movement of capital

As with persons and data, the modal approach to the movement of capital can potentially feed into three types of analysis: the identification of capital in circulation, its transformation through movement, and approaching it as a space of flows.

Identifying capital in circulation. There can be no doubt that circulation has an ontological dimension when it comes to capital. Movement can be said to be an intrinsic part of it, and we have already seen its use in the powerful theory of one Italian author in the first half of the 20th century in relation to securities.[129]

And so there should be no difficulty arguing that movement is an essential modality of the law's treatment of capital. One can even say that it is the archetype of the modal a priori approach. Without movement, capital loses one of its essential characteristics.

But beyond the work of F. Carnelutti and another more recent study[130], it is noteworthy that movement is an understudied area in theoretical terms, particularly in the doctrine specialising in banking and financial law.

This state of affairs can no doubt be explained by the self-evident nature of movement when it comes to capital. What is the point of discussing or reflecting on this movement since in our liberal environment it is an inherent quality of the very notion of capital?

Without wishing to contest the state of the art, it is possible to explore the potentialities of the notion of movement as a modal a priori approach.

There are two major working hypotheses for which it is interesting to consider movement as an indispensable a priori approach for any reading of the law's constructs in relation to capital.

The first relates to the scenario in which there is a shift from restricted and limited movement of capital to a situation in which it is allowed to circulate freely. Europe (EU) went through such a shift in the late 1980s with the adoption of the Union's fourth key freedom: the movement of capital in the internal market. In such a scenario, it is clear that the modal a priori of movement literally serves as a guide for all constructs of the law put in place to enable capital from all around the globe to circulate from or to the European Union.

The second hypothesis relates to the different situations in which the established movement of capital is potentially called into question. Every time a public or private restriction affects capital flows, it opens up a process of reflection about the justification or regime for such movement.

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129 F. Carnelutti, *Teoria giuridica della circolazione*, *op. cit.*

130 See M. Teller "Le droit financier appréhendé comme 'des flux en circulation' : quelles dynamiques et quels enjeux ?" in J.-S. Bergé and G.-C. Giorgini (eds), *Le sens des libertés économiques de circulation – The Sense of Economic Freedoms of Movement* (Bruylant, 2020), 91.

The prospect of the closure or suspension of a market (e.g. stock market), of checks on currency movements or the freezing of assets by a public body necessarily triggers far-reaching analyses of the merits of measures considered antithetical to a natural state of movement. The same is true of the strictly private sphere. Any process involving the allocation of wealth, whether as an investment or guarantee, also fuels much reflection on the possibility of constructing legal mechanisms to regulate the circulation of capital.

In any case, the movement of capital is an *a priori* modality that justifies questions about the possibility of restricting or regulating it excessively.[131]

The transformation of capital through movement. Does the a priori of movement have a transformative effect on capital?

The flow of capital owes much to the dematerialisation of items of value (for example in financial law: securities, financial contracts) and value exchange structures (via multilateral negotiations systems).

Let's look at just a few examples:

– when a security is fungible, transferable or negotiable, it can be easily dissociated from its root structure;
– we are able to transform short-term deposits into long-term credits;
– through securitisation, simple bookkeeping entries can be put into circulation;
– financial agreements make it possible to transform actions and obligations usually subject to market regulations;
– the legal regime for cash bonds and vouchers has significantly evolved due to a new surge in these instruments through network technologies like blockchains, etc.

This raises the question of the extent to which it is possible to correlate this transformative effect to a modal a priori approach to movement.

The transformative effect brought about by movement can be a useful way to measure the scale and nature of the phenomena at work in the domain of capital flows. There are two primary categories of examples.

The first relates to the traceability of monetary and financial flows. The transformations at work in the circulation of capital make it difficult and sometimes even impossible to follow them, whether in the fight against money-laundering or tax evasion. Tackling the source of the problem—transformative

131 For an illustration of restrictions on foreign direct investment in times of crisis, see the Communication from the European Commission (EU): *Guidance to the Member States concerning foreign direct investment and free movement of capital from third countries, and the protection of Europe's strategic assets, ahead of the application of Regulation (EU) 2019/452* (FDI Screening Regulation), C(2020)1981 final.

circulation—means tackling the a priori approach to movement which underpins the system as a whole. In other words, market players (e.g. financial institutes) must learn to live with the risks inherent in this permanent transformation of capital. It is impossible to win the battle against the laundering of dirty money or tax evasion. Those involved do their best to show that they are complying with the regulatory provisions, and when their actions are nonetheless compromised, they try not to get caught, and if they are caught they seek a plea bargain!

The second category is linked to the relationships between units and masses of capital. The obvious porousness between them is because of movement. It is moving units that create masses and moving masses that free up units. These two-directional transformations are so shape-shifting and involve such a high number of stakeholders that it is impossible to eliminate one of the two. For example, it is not as if there were central bankers on the one hand administering the masses of capital, and investment or retail bankers on the other distributing units. This porousness between masses and units makes it clear that the respective roles of the different stakeholders have become largely decompartmentalised. It is not rare for central bankers to be required to distribute liquidity beyond their traditional circle or for commercial bankers to distribute credit without value-added guaranteed by the State. There is no longer a guardian of the masses (central bank) on one side and distributors of units on the other (investment or retail banks). The two coexist and are subjected to the same preponderant phenomena of movement.

Space of capital flows. The circulation of capital is clearly suited to an analysis in terms of a space of flows.

This form of movement follows circuits and loops that are the subject of specialist regulations.

Whether we are talking about the circuits for processing hard currency or the organization of the different chains for handling securities on the markets, all of these movements can be analysed as spaces of flows.

Although this vocabulary does not appear to be used by specialists, it is immediately operational. The journey of a security on a financial market sees convergence between a highly heterogeneous set of rules and practices (public, private, local, national, regional, international) which only have one objective: to enable the transactions involving that security to accompany it through every movement of its journey.

The question is: how can we try to broaden the perspective of a normative space of flows to new working hypotheses specific to banking or finance?

As one specialist admitted, “In finance, you might say that we have shifted from the pyramid to the network, but now the shift is from the network to the neural network. The financial economy has established a model for transactions in which the digital and technological interface can replace the traditional intermediaries and trusted third parties. Blockchains, cryptocurrencies and RegTechs

have clearly shown us the revolution is underway, one that will almost certainly upset the belief system of legal analysts".[132]

In the face of such upheaval, we need conceptual tools that allow us to put a name on the phenomena at work. Referring to the notion of a space of flows may be very useful in this regard.

We will now look at the example of blockchain technology, with two distinct analytical approaches.

First of all, the notion of a space can be said to supplant the traditional (State) notion of territory. This is the perspective developed in readings of transnational law which see space as a feature of normativity, i.e. as a normative space. This means seeing the circulation of information in a blockchain as essentially obeying rules defined by the very stakeholders driving the technological process itself. This is the notion that "code is law", in competition with the place given to the State, its institutions and its laws. This feeds into a debate about the aptitude of these non-State normative spaces to govern situations with autonomy and also about the necessary (or not) role which State law nonetheless intends to play. The most topical example of the moment is that of virtual currency, including of course Bitcoin but also the Diem project developed by Facebook.

There is another possible approach that endeavours to create resonance between territories, in the terrestrial sense of the term and therefore associated with the State, and the circulation within the datasphere. Within digital space, blockchains create circulation that is largely detached from terrestrial territories. One can see this as a veritable digital layer enveloping the planet as a whole. Rather than reading these data flows through the necessarily fragmented prism of territories or considering this space as being entirely free of any dependence on territories, it is more apposite to consider the notion of flow as such and to establish a dialogue between it and territories. Each time a flow is attached to a given territory based on a particular criterion (e.g. location of one stakeholder or marketplace), it is the flow in its entirety that is potentially affected. For example, if a debt security is processed using blockchain technology with the intervention of multiple stakeholders and territories, the best approach is to see the blockchain as a moving whole (a space of flows) bringing together a set of rules (a normative space of flows), albeit heterogeneous ones. This perspective allows us to move beyond the often fragmented reading, territory by territory, traditionally adopted in legal approaches as well as the competing reading of transnational law, whereby such movement is said to be entirely free of any territorial attachment. Here, the flow of information is placed at the heart of the situation in question. Whatever the type of rules one applies to it, whether private or public, whether of a local, national, regional or international dimension, it is the flow itself that constitutes the core of the legal approach.

Addressing a normative space of flows in this way can generate stimulating dialectical games with a temporal factor. The question can be put as follows: in our efforts to delimit the circulation of information in blockchains, how is time taken into consideration?

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132 M. Teller, "Le droit financier appréhendé comme 'des flux en circulation' : quelles dynamiques et quels enjeux ?", *op. cit.*, p. 91.

One response is to say that the question of time is not central and that the issue at hand is essentially tackled through the spatial considerations outlined earlier.

The other response—the one that interests us—is more audacious. It begins with the observation that in certain situations time is of cardinal importance, such that it brings together the different spatial approaches.

In an effort to develop this hypothesis, we must consider situations in which time is a key element of the technical process underpinning blockchains. For example, the time involved in "mining" operations (performing each block and stringing them together) or the time dedicated to the management of certain situations (such as a "fork", when the chain splits into two branches) are regulated by the blockchain stakeholders.

In such situations, the time needed for these operations is literally standardised.

Should a dispute arise (challenge against a mining operation or the handling of a fork) and one wishes to identify the applicable rule, the tools outlined above to delimit space would not be the most useful. What is crucial here is to identify the time (and also the speed) of the situation to which a set of rules applies.

This means delimiting time becomes the primary tool of the legal approach. The approach based on a normative space of flows does not disappear, but it is rather absorbed by the time-based approach whenever time plays a determining role in how the law addresses the situation.[133]

E. Applying the modal approach to the movement of waste

As with persons, data and capital, the modal approach to the movement of waste can potentially feed into three types of analysis: the identification of waste in movement, its transformation through movement, and approaching it in terms of a space of flows.

Identifying waste in movement. The modal a priori approach to movement is of central importance when it comes to waste.

Waste and movement go hand-in-hand. Waste implies an act of abandonment or defection, whereby the person getting rid of it distances himself from it, whether displacing it to abandon it or simply leaving it where it is and continuing on his way.

The law can intervene as early as the abandonment or defection of waste to prevent it from generating an effect of movement. For example, there are a great number of particularly restrictive legal policies designed to prevent the risks of pollution. There are also mechanisms with a more

133 See also on this theme: J.-S. Bergé, «Libre propos en trois temps sur la délimitation juridique de la circulation de l'information dans la blockchain» in *Actes du cycle de conférences du Master de Droit international privé et du commerce international* (IRJS Editions, *forthcoming*).

limited application but which can have a significant impact, as in the case of prohibiting industry from practising planned obsolescence to prevent them from speeding up their transition to waste status.

But where there is waste, one faces the question of its movement.

We are not accustomed to presenting the movement of waste as a modal a priori approach.

Let's consider how this can be done.

Significant legal mechanisms regulating waste can be read or re-read in the light of the modal a priori approach to movement.

Without going into the detail of the many regulations adopted at all levels (local, national, regional and international), we can consider the scenario in which the law focuses on closely regulating the possibility of waste moving.

For example, principles of self-sufficiency and proximity guide the processing of waste intended to be eliminated (e.g. household waste). Under the principle of self-sufficiency, each territory must develop its own tools to process waste so it does not need to be displaced to another territory. Under the principle of proximity, the waste processing location must be located as close as possible to that in which it is collected. These principles justify a strong legal framework for the movement of waste, seen as a risk, i.e. something to be avoided.

The way these principles are applied can lead to contradictory solutions in terms of movement. Self-sufficiency may require the long-distance transport of waste within a single territory, whereas the principle of proximity may require the export of waste to another territory located geographically closer but on the other side of a border.

In such situations, the analysis of which can vary significantly depending on how dangerous the waste is and its final usage, elimination or storage, it is clear that the modal a priori approach to movement is of central importance.

This a priori approach can be seen differently, either in terms of the freedom of movement (free trade or free movement of goods) or of environmental protection.

There is significant gradation via mechanisms with an international dimension which classify waste according to whether it can or cannot be exported/imported and according to a particular condition.

But whatever the scenario, it is clear that the modal a priori approach to movement occupies an important place and that its content or gradation can serve to guide our analysis.[134]

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134 For a discussion of the legal movement of waste in the European and international context, see N. de Sadeleer, *Droit des déchets de l'UE – De l'élimination à l'économie circulaire* (Bruylant 2016).

The transformation of waste through movement. Does the a priori approach to movement have a transformative effect on waste?

There used to be a time when waste was waste and had no intended purpose other than to be simply stored or destroyed.

Then things changed with policies to recycle and reuse waste, giving rise to various mechanisms designed to accompany a careful waste transformation process.

Waste can also be transformed outside of a constructed and controlled process.

In any case, the question is to what extent the modal a priori approach to movement can be read or re-read as a factor in the transformation of waste.

To determine how movement can be part of such a transformative effect, we can distinguish between scenarios in which the transformation is the result of a controlled or uncontrolled process.

In the former scenario, legal mechanisms come to mind which are intended to put waste back into circulation having altered the characteristics that made it waste. Here, waste is transformed to be once again put into a state of movement, where previously it would have been stored or destroyed. Such transformation may involve a physical alteration of the waste, which, once treated, is recycled. This is a process through which waste is given new value. For example, some plastic waste can be heated to enable the production of new plastic objects, ready to be used again. But in other cases, the transformation is purely legal. The law is used to disqualify waste as a "sub-product" that can be reused in a chain of production or usage. For example, sawdust was long considered as a form of waste made up of fine dust or small particles of a material that had been sawn (wood for example). Nowadays it can be considered under certain conditions as a sub-product of the sawn material (in this example wood), and one that can therefore be reused without first falling into the category of waste. In these different situations, the modal a priori approach to movement is at one with the waste transformation process. One could even argue that movement plays a role in both directions of the transformation: it is movement that enables the transformation and, vice versa, the transformation that triggers the subsequent movement. This is therefore a phenomenon that is part of the circular economy.

In the second scenario, the transformation of the waste does not come about due to a controlled process but nonetheless remains closely linked to movement. The most significant example involves cases in which movement causes units of waste to transform into a mass of waste. This brings us back to the same phenomenon observed in the case of persons, data and capital. The circulation of units of waste gives rise to the formation of masses of waste. In law, the question is whether this movement/transformation is such as to justify duplicating the law with one way to deal with "units" and another "masses". Let's look again at the example of plastic. Regulations can prohibit the use of certain plastics which cannot be recycled or are considered dangerous for the environment. It can also tackle masses of plastic, as in the case of broader initiatives to protect our oceans. This twofold

approach is only possible if we accept that two legal objects coexist and that they do not necessarily invoke the same legal constructs. To establish this as reality, upstream of the law's constructs one must adopt the a priori approach that the nature of circulation is such that it can transform objects —in this case plastic waste—in a state of movement.

Space of waste flows. Can flows of waste be said to form their own normative space? Chains and circuits for the processing of waste have always existed. The law increasingly intervenes to structure the movements of waste. The practices of private stakeholders have long determined the favoured modus operandi. From the rag-and-bone man to mafia operations, there are many waste flows organised by humans.

The question is whether it is useful to examine them in terms of a normative space of flows.

Approaching the movement of waste in terms of a normative space of flows carries the same advantages as those described above in the case of persons, data and capital: attributing to movement a conceptual unit that allows it to become an object—in and of itself—of the law without suffering from the fragmentation effect produced by the sequenced analysis of the territories crisscrossed by moving waste.

This fragmentation makes it very difficult to adopt an overall approach to waste flows, which in most cases play off the differences between territories to escape the particularly restrictive regulations in this domain.

To avoid this disadvantage, we must question the utility of relying on the overarching notion of a normative space, considering that flows, whether in essence legal or illegal, bring together a certain number of legal rules with diverse origins (public, private, local, national, regional and international) that all contribute to the realisation of the same objective: ensuring that waste can move from its point of departure to its ultimate destination.

Taken in its entirety, such a flow becomes the object dealt with by the law. It is no longer fragmented. It is addressed as a whole, from end to end.

This way of seeing things offers a refreshing reading of real-life cases.

Consider the example of the shipwrecked Erika, where a relationship was established between a fossil fuel producer and the final form of the waste in question, clumps containing a mix of oil and sediment. This extension of liability to the company entirely rests on the law's capacity to attribute responsibility for the entire flow to one stakeholder who only intervenes at certain stages of the chain. To do so, the entire space of flows must be subjected to a norm that lays down a principle of liability, in this case one of extended liability.

There are other possible applications of the notion of a normative space of flows. Chains of liability (this applies to all other areas, as when liability is extended to the control of subcontractors) are always difficult to establish when the objects in question have a holistic dimension and involve intervention by a considerable number of stakeholders, spread out over many different territories. Think of the earlier example of plastic islands which now form the planet's latest continent. It is conceivable that these moving islands, the product of a considerable number of plastic microparticles, themselves in a state of movement, could become the focus of intervention for heterogeneous legal rules all of which would share the same objective: to regulate the plastic island in itself.

This overall approach is really the only way legally to address the object in question. And to achieve this, it is useful to consider a flow as forming in itself its own normative space.

Chapter 4
Rethinking Control

Building on different hypotheses of movement beyond control, we can explore how the law can reconstruct itself by rendering visible the risk of a total loss of control (§1), redistributing legal duties (§ 2) and self-limiting rights (§ 3).

I. Rendering visible the risk of a total loss of control

In order to render the risk of a total loss of control visible, one must first understand what is a visible risk (A) and a silent risk (B) and then show how this relates to situations in which there is a total loss of control (C) before finally trying to model it (D).

A. What is a visible risk?

Risk is a notion that is rich and complex and studied in many different disciplines, including law.

Risk and multidisciplinarity. Risk is generally defined as the occurrence of an uncertain event.

This event can be the source of gain or loss. This is the case, for example, of the stock market value of securities which can generate a gain or loss depending on price variations between the moment of purchase and the time the security is sold on.

Risk has been studied in a wide range of academic disciplines. Economists address risk-taking in liberal theories as well as in the study of so-called risk-averse behaviours. It has been the focus of highly advanced mathematical studies through the analysis of probabilities. It has an important historical dimension, particularly through the notion of risk at sea, addressed by traders as early as the 12th century. Geography is of primary importance in the spatialisation of risk, depending whether it is considered to be territorial or diffuse. Risk raises epistemological, sociological, political, ethical and philosophical questions that offer abundant wealth. Many studies have used the prism of risk to consider the major changes in the world and in our lives in society. Finally, it has become a central object in the study of how organizations are managed, in particular businesses and public entities.[135]

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135 Among other abundant studies on this subject, see the following entries, which generate many references: «Risque et aversion» (F. Lemarchand), «Risque et épistémologie» (N. Bouleau), «Risque et espace» (V. November), «Risque et

Risk theory: the legal approach. The modern legal understanding of risk essentially involves an approach based on its harmful dimension. Risk is the product of unforeseen circumstances that cause harm and raise the question of how to deal with risk in terms of liability and/or guarantees.

Two main approaches can be adopted in this regard. From an individual perspective, there is the law of liability, which has sought to integrate risk into its foundations. Adding risk to the notion of fault, as the potential basis for the victim's action against the person responsible for the harm where that person cannot be proven to be blameworthy, the law developed the notion of liability for risk where there is no fault, also known as objective liability, which has gradually come to occupy a central place in both private and public law. Various major justifications have been suggested for this: the notion of risk and profit (he who profits from an activity must assume the associated risks), risk created (he who creates a risk must bear the consequences) and risk and authority (the risk generated by a person or thing is assumed by the entity that exercises power over that person or thing).

In its collective dimension, there are many legal mechanisms in which risk is pooled. The law has looked at professional risks, the risks of war or riots, the inherent risks in natural or industrial disasters, etc. In these mechanisms, there is a socialisation of risk at work with the intervention of a wide range of stakeholders. These may be private (e.g. insurance, reinsurance and mutual insurance companies or retirement funds) when the risk can be assessed from an accounting perspective and a guarantee has been provided to cover it. Alternatively, public stakeholders (primarily the State) may be required to intervene. These mechanisms revolve around the formation of guarantee funds governed by the law (for example in France there is a guarantee fund for victims of terrorism and other offences (FGTI), another to compensate blood transfusion recipients and haemophiliacs contaminated by HIV (FITH), and another to cover mandatory insurance against damages (FGAO)).

All of these legal approaches reflect an increasingly pressing need to take charge of risk. And our increasing refusal to be fatalistic and our unshakeable belief in upstream (prevention) or downstream (compensation) safety mechanisms explain the considerable success across our societies, particularly in the area of law, of what is now widely known as risk theory.[136]

One major example: the risk of nuclear pollution. Of all the risks dealt with legally, there are those that are specific to situations in movement. Without claiming to be exhaustive, let's look at the risk of pollution.

Very often correlated to a phenomenon of flow on land, in water or in the air, pollution has not always been analysed as a risk that can potentially carry liability. Triumphant industrialisation even associated it with purification (acid cleans!) and beneficial virtues (welcome smoke plumes

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histoire» (J.-B. Fressoz) of the *Dictionnaire de la pensée écologique,* (eds) D. Bourg, A. Papaux (Presses universitaires de France, 2015); see also the globally successful book by U. Beck, published in its original version in German (1986) shortly after the Chernobyl nuclear disaster, available in English: *Risk Society: Towards a New Modernity* (Sage, 1992).

136 On the legal relationship between risks, insurance and liability, see F. Ewald, *L'Etat providence* (Grasset, 1986).

from industrial chimneys as a sign of prosperity). Things have moved on, particularly when it comes to large-scale accidents, which have led to the development of often highly elaborate and novel mechanisms to manage risk (prevention and treatment).

Again without claiming to be exhaustive, we will look at the example of civil nuclear risk through the prism of civil liability. The major nuclear accidents that have peppered recent history (Three Mile Island in 1979, Chernobyl in 1986 and Fukushima in 2011) are the source of many legal initiatives designed to subject the risk of nuclear pollution to a liability regime that largely departs from common law solutions.

In the French context, various international texts (in particular the convention signed in Paris in 1960, subsequently amended and developed several times) as well as domestic texts (legislation adopted in 1968, also amended and developed several times) have laid down a system of original liability, marked by its objective dimension (no need to prove any fault), a pre-designated liable party (the operator of the civil nuclear facility), a drastic limitation of the causes of exoneration (natural disasters like earthquakes are excluded and the only such causes that can be invoked are armed conflict, civil war and uprisings), the use of mandatory insurance (taken out in pools due to the large sums at stake) and a guarantee by the State and in some cases even by States collectively, above certain thresholds.

Although these mechanisms do not cover risk absolutely (compensation is based on a system of three capped rates) and their implementation often raises difficulties with regard to proof (in particular the chain of causality in cases where the pollution is discreet and lacks the flagrant quality of a disaster), they are clearly part of a sophisticated approach to the legal management of risks inherent in a very particular flow of pollution, given the irreversible and large-scale consequences it can cause.[137]

B. What is a silent risk?

The term "silent risk" is not very well known beyond the circle of risk management specialists. It is however very useful, whether in general terms or specifically in relation to situations in movement.

Early work on the notion of silent risk. Multi- and cross-disciplinary studies dedicated to silent risk are few in number. It must be said that it is never easy to deal with something that goes unseen or which one is not accustomed to hearing about.

A research centre in France that specialises in the study and observation of risks nonetheless dedicated a special issue of its journal RISEO[138] to this subject. Several salient traits of silent risk emerge from the different analyses proposed.

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137 See in particular: A. Al Faruque, *Nuclear Energy Regulation, Risk and The Environment* (Routledge, 2018).

138 B. Steinmetz (ed.), "Le risque invisible", *RISEO* (2017/2), 207 p., with contributions from researchers and practitioners in law, sociology, geography, management, economics, political science and ecology, accessible online: <https://www.calameo.com/read/005049066fa9bf1a01289>.

First, it can be pointed out that most of today's visible risks, i.e. those we talk about, were previously invisible or silent. Looking back at the earlier examples of road traffic accidents and civil nuclear facilities, we see that there is a lag between the emergence of the risk and the response from private or public initiatives, and in particular from the law. The revelation and treatment of new risks are a permanent quest. Even for risks already identified as such, the analyses must be adapted to the new manifestations of risk. For example, the risk of nuclear contamination in the aftermath of an earthquake has only recently come to be understood following accidental experiences that revealed a new aspect of a risk we thought we understood.

Second, when it comes to silent risk, there is often very acute tension between the proportion of the risk that we cannot objectively observe at a given time, mainly due to gaps in our knowledge, and the proportion that we hide, either deliberately to avoid having to deal with it or in secret, in particular through resilience, for fear of being unable to deal with it.

Lastly, it is clear that, like risk generally, the narrower concept of silent risk has attracted attention from extremely diverse disciplines. All of the hard sciences, humanities and social science are now called upon to study the way risk remains hidden or how it is revealed despite efforts to conceal it. Such analysis may focus far upstream of the risk management process, i.e. on risk prevention. And of course it relates to the later stage of dealing with risks.

One iconic example: the glycol ether scandal. This scandal was the focus of an in-depth sociological, political and legal study.[139] It involved the use of solvents, known as glycol ethers, in the United States and France, especially in completely sterilised "white rooms" designed for the assembly of high-tech components.

Ethnography was central to the researcher's study. The aim was to develop a sociological analysis of "low-noise" (or silent if you will) public problems and highlight the dynamics underpinning the social construction of ignorance.

Without going into the detail of the researcher's reflections, which largely fall outside the scope of this essay, it is interesting to look at his comparative analysis of the two chosen environments (United States and France), particularly in terms of the visibility and invisibility of the risk involved in using glycol ethers, first developed in the 1930s and used more intensively in the post-war period.

In the United States, the author observes that the first warnings about the dangers of these chemical substances for workers (especially women, with abnormally high miscarriage rates) focused on the question of tolerance thresholds for each substance, whereas the process in white rooms involves using, in the form of a cocktail, a large amount of many different components, present in very small quantities. When the focus later turned to glycol ethers alone, the conclusion was drawn that there was no link between these substances, present in very low quantities,

139 J.-N. Jouzel, *Des toxiques invisibles – Sociologie d'une affaire sanitaire oubliée* (EHESS Éditions, 2012).

and the specific pathology of miscarriages. In other words, the glycol ethers were "pardoned". They were not analysed as a visible risk.

In France, glycol ethers became a source of public concern, conveyed by international legal scholars who took inspiration from the American case right about the time these substances stopped being a political, legal and economic issue on the other side of the Atlantic (mid-1990s). In his study, Jean-Noël Jouzel emphasises another factor altogether in the silent quality of the risk, the bipartisan approach to the negotiated management of occupational illness established in the late 19th century in France. He explains that the recognition of occupational illness largely depended on the balance of power between management and the workers, relegating scientific knowledge about the danger of these products to the background. It was in this context that the focus on glycol ethers as a potential cause of occupational illness in white rooms re-emerged in France at a time when, in the United States, the investigations had been broadened to other substances and new pathologies. This renewed focus helped maintain the attention on glycol ethers, silencing other risks inherent in other substances and other practices.

Situations in movement and the silent risk of losing control. We need to ask whether the presence of a situation in movement is such that it can specifically characterise the scenario we are interested in: the silent risk of losing control.

There can be no doubt about the response. The movement of goods or persons (*lato sensu*) is the cause of a loss of control which is made all the more difficult to identify by the fact that the territories in which the risk is present are changing, as are a certain number of stakeholders and rules specifically dedicated to the exercise of control. This observation is reinforced by the scenario—very frequent in terms of silent risk—of diffuse circulation or movement in the form of a network, which does not necessarily leave its distinct mark on the territories affected by the risk.

Risk and movement often go hand-in-hand, and this correlation necessarily affects the particular situations we are interested in here and in which there is a silent risk of losing control.

But how can it be that the risk of losing control over situations in movement caused by humans can continue to be silent? What possible general explanation can one give, without overlooking the particular reasons that might relate to specific situations?

To answer these questions, we must once again refer to the spectre of the loss of control.

The white-collar workers at the head of major public and private, national, regional and multinational organizations cannot publicly admit their powerlessness, explaining that situations in movement have escaped their control.

Organised crime generates much of its profit from such situations, whether over short or long circuits, visible or hidden, legal or illegal, careful not to communicate about the entire chain of movement, which cannot be controlled from end to end.

People never want to fear the worst. The idea that they can be submerged by an environment to whose development they contribute through the most trivial of their daily actions is highly anxiety-inducing. They do not want to hear about movement beyond control, preferring to pay heed to reassuring discourses, albeit totally false, depicting the situation as under control.

Science in the broadest sense (hard science, humanities, social science, fundamental science, applied science) also contributes to this state of affairs. Addressing that which has escaped our control is difficult for scientists insofar as they do not really know how to talk about that which they cannot measure.

This alignment between the behaviours of all these key players is exacerbated in cases of collusion. Situations in movement create porousness between the spaces (public, private, legal, illegal, commercial, non-commercial, etc.) reserved for each of these players. This porousness is conducive to the development of conflicts of interest, which are frequently highlighted by the precise and carefully developed study of silent risks.

The risk of losing control does not escape this twofold observation—indeed on the contrary.

The idea that humans can lose control—sometimes in a lasting manner—over the flows they themselves have created is not one that penetrates easily into our collective consciousness. It is usually a silent risk, one we will return to later.

C. A breakdown of risk in situations involving the total loss of control over movement

In a certain number of situations, our perspective needs to be turned on its head. Wherever the general, political, economic, social, legal (etc.) discourse is built around an illusion of control, we must hammer home the need to think of our environment in terms of loss of control.

The aim here is clearly to reintroduce, and correctly locate, the possibilities of control.

Let's return to the illustrations outlined earlier.

Returning to our preliminary working assumptions: greenhouse gases, the spread of all kinds of products and organisms, pandemics, and the dissemination of information. To describe a total loss of control over flows, we have focused on a few key scenarios: the release of greenhouse gases, the spread of all kinds of products and organisms, pandemics and the dissemination of information (see Chapter 1). Without repeating what has already been said, we will now try to characterise how, in these situations, control is necessarily exercised in a context that suffers from a total loss of control.

Whether we are talking about the release of greenhouse gases, the spread of products or organisms, the spread of epidemics (which sometimes transform into pandemics) or the dissemination of information, any analysis in terms of control should have just one point of departure: the irreversibility, beyond all control, of the initial process of movement. Each time these different phenomena pop-up, they starkly reveal the impossibility for stakeholders of reversing this initial process. The situation escapes their control and this escape is the primary characteristic of the movement that unfolds after that initial release. To maintain control over these flows, the gases should never have been released, the products and organisms allowed to spread, the epidemic should have been prevented and the information kept secret. Once the release takes place, the initial process of movement becomes irreversible. It is too late.

Our awareness of this initial total loss of control in these different situations is almost never admitted. Indeed, the very opposite usually occurs. As soon as the movement begins, every effort is made to insist that the situation remains or must remain under control!

The denial of this initial and total loss of control over movement is manifested in the most diverse ways. Alongside other developments, for more than 40 years (the famous Charney report submitted to the American authorities dates back to 1979[140]) we have known that greenhouse gases linked to the massive and constantly rising use of fossil fuels have tragic consequences for our planet and its climate. We know that the spread of certain products or organisms have irreversible effects yet we continue regularly to authorise their circulation (examples include genetically modified organisms or the huge number of chemical products used in the agri-food industry). We believe we have the capacity to defeat epidemics, even though at regular intervals they continue to rattle the confidence we have in the level of control we exercise. We constantly produce more and more information but are incapable of controlling its exponential dissemination.

So what must be done? Do we continue to shout from the rooftops that the situation is under control and spend our time running after forms of movement that have irreversibly escaped us. Or can we finally resign to the fact that control, if there is such a thing, is forever to be exercised in a context of total loss of control?

This essay, of course, argues for the latter.

Returning to the systematic approaches to persons, data, capital and waste. Once again, the idea is simple. Since in essence, persons, data, capital and waste circulate, since movement is inherent in these objects of the law, it must be accepted that movement beyond all control is the rule and that control is an exceptional state.

Of course, we could continue to feed the political, economic, social, legal (etc.) discourses by insisting that things remain under control.

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140 Available online: <https://www.bnl.gov/envsci/schwartz/charney_report1979.pdf>.

But that is simply not true.

There are of course some controls which work in a certain number of scenarios, but we must be willing to admit that they take place in an environment in which there is a total loss of control.

For no-one can assert that migrant policies are under control. No-one can deny that a considerable volume of data is in circulation beyond control. No-one can suggest that capital flows are part of a fully controlled process. And lastly, no-one can deny that the movement of waste has escaped our control.

Like the previous hypotheses, we need to reverse our perspective and admit that control is exercised in a context of total loss of control.

Let's look once again at each domain in an effort to pin down the current state of affairs, beginning with persons.

Persons: no situations legally kept in place or moved. The legal discourse on the control over the movement of persons runs up against various obstacles that raises doubts about the reality of control.

The obstacles to control are essentially circumstantial and ordinarily call into question the effectiveness of the law. There is therefore, *a priori*, no real point, at least in theoretical terms, in noting that specific circumstances can lead to situations in which there is a total loss of control.

Another approach is nonetheless possible. We can explore the essential dimension of the loss of control. A person (in the broad sense: natural person or legal entity) is not a legal category like any other. Any legal construct that postulates control over the movement of persons, whether by the subject itself or by third parties, runs up against serious difficulties.

For example, the idea that a person is necessarily in control of its own movement is false in the case of refugees, whom the prevailing discourse tends to confuse with migrants, which is of course not by chance. Refugees are forced to flee. No more than anyone else, they do not have full control over their mobility, and that is why the law has attributed them a particular status. Here's another example: the idea that an authority can, through constraint, control the large-scale movement of persons is also to be taken with a pinch of salt. Illustrations of this include the low percentage of effective returns at the border of foreign nationals without the proper paperwork (for example, in France the figure is currently around 14%) or the patent failure of inter-State processes to relocate asylum seekers (in Europe for example). This kind of observation can also be made on a more individual scale. For example, the movement in France of children born through overseas surrogacy is marked by the interference of multiple legal mechanisms that prohibit any real control of the effects generated by a situation that objectively runs counter to our national public order.

Of course, one could point out the contrast with the harshest dictatorial regimes such as North Korea, where the mobility of subjects is reduced to the desired level. Beyond the flaws inherent in such an approach, it is clear that here it is the very notion of a person that is denied by the assertion of mobility under total control.

In a diametrically opposed register, policies that actively contribute to the free movement of persons also run up against considerable obstacles that raise doubts about the capacity of legal mechanisms to organise and therefore effectively control such mobility. This is particularly true in the European Union. The mechanisms put in place over the last 60 years in relation to natural persons stand in contrast to the very low level of mobility of the European population taken as a whole (around 2%). As for legal entities, the absence of shared rules has long been the norm, and although recent initiatives have been taken, their construction remains fragile. This is also true at a national or local level, where the discourse in favour of more mobility repeatedly runs up against obstacles impeding mobility.

All of these observations show that the movement of persons cannot be understood overall as a legal operation that is under control. Converging indicators that there is a total loss of control advocate in favour of reversing our perspective of control, with all of the consequences that implies in legal terms for movement and, of course, control thereof.

Data: at once legally appropriable and beyond appropriation. When the law addresses a particular type of data, it is usually to assign a particular legal regime to it.

For example, the law has identified personal data or data obtained via public surveillance techniques and assigned a different legal status to each.

This raises the question of the relationship that is established between such an approach, data type by data type, and movement.

The answer speaks volumes. There is a kind of hiatus between the status of data and its state of movement.

For personal data, the law seeks to establish a link between the person and its data. Whether the data is analysed as an extension of the person or as an item of ownership, for example, the legal construct essentially is based on control over the data by a legal subject.

For data generated via public surveillance, the law seeks to regulate the conditions under which the collected data can be obtained and used. In other words, the legal rule limits the lawful use of the data to a given perimeter.

To believe that a phenomenon of movement can be contained by asserting exclusive or limited rights over the data is no more than a fantasy.

These rights can serve as a tool of control over the way the data is used, but under no circumstances can they prevent it from being used, and therefore prevent its movement.

For example, an IP address, which identifies a machine connected to the Internet, a computer for example, is generally considered to be a form of personal data. The assertion of an exclusive right over that data allows its usurpation by a third party to be sanctioned. But this is in no way a shield against the circulation of the data. Each time the machine connects to the Internet, the "IP address" constitutes data that moves around in a way that is more or less controlled as the user browses different networks.

This state of affairs should make us think about the real capacity of the concepts of "ownership" and "surveillance", very commonly used in reference to data, to grasp data circulation phenomena, especially where there is a total loss of control.[141]

Capital: when the law drives out circulation, it comes back at a gallop. The question of the movement of capital in situations in which there is a total loss of control is presented in legal terms in its own light.

As already noted several times, movement is the very essence of capital, such that any control that might be exercised is necessarily relative. Movement and loss of control go hand-in-hand you might say, although in the discourse every effort is made—and the law is no exception—to focus the minds on the potentialities of movement, while at the same time suppressing fears stoked by the possible loss of control brought about by movement.

On strictly legal terrain, this state of affairs means that all the tools of control over the movement of capital are by definition on the decline. As soon as levels of attention waver (especially after major monetary or financial crises), as soon as the controlled process shows any weakness (especially with regard to criminal behaviour), the capital is freed up and circulates once again.

The cases of money laundering, tax avoidance and evasion, the rise in securitisation, currencies and payment methods, studied earlier as part of a factual approach to the total loss of control (see Chapter 2, xxx), all illustrate the unbreakable link between movement and the loss of control.

What replaced the old methods of laundering money? New methods capable of absorbing even greater volumes of dirty money. What replaced the great tax havens of the past? Ever more robust locations generated through monetary and financial engineering. And what of the old tools for controlling money supply? They're not worth much unless we take into account the new types of money that escape the control of traditional operators. And so on.

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141 On the contestation of the ownership model, see: J. A. T. Faifield, *Owned – Property, Privacy, and the New Digital Serfdom* (Cambridge University Press, 2017). On the criticism of supervisory practices, see S. Zuboff, *The Age of Surveillance Capitalism – The Fight for a Human Future at the New Frontier of Power* (Profile Books, 2019).

Each time control requires the intervention of a legal mechanism, it is the law itself that finds itself confronted with the spectre of a total loss of control. The law adapts and imposes new forms of control. The movement of capital does not however cease, which necessarily means a corollary loss of control.

Whatever the overarching approaches one adapts to the movement of capital—capital units, mass or free movement—, it is clear that movement and loss of control go hand-in-hand. And when movement becomes total, we know that the loss of control is itself total.

Waste: from trafficking to the spread of waste, the legal pipedream of eradication. To envisage how the law can deal with the total loss of control over the movement of waste and broaden the reading proposed in the cases of persons, data and capital, we will now explore a different path to those considered above.

This path involves the scenario of eradicating waste (which is of course inconceivable for persons and hard to imagine in the case of data or capital).

Looking at the factual scenarios in which there is a total loss of control over waste—collection chains, processing and recycling, trafficking, oil spills, and the plastic continent referred to earlier, whether in terms of units, mass or microscopic waste—, let's imagine the law playing an active role in developing a much more radical solution: an outright ban on waste.

The most readily comprehensible example is that of plastic or certain types of plastic. Given that we know that this material persists in various forms, including microscopic, and requires an extremely long process of reabsorption by the natural world (water, land and air), one solution could be to simply eradicate the material that is the underlying cause.

The law already has experience of such scenarios. In contemporary human history there are several examples of materials that have simply been prohibited on a global scale.

One quite successful example, even though it does not directly relate to the question of waste, is the elimination of the use of certain gases that undermine the ozone layer which protects the planet from ultraviolet rays (Vienna Convention for the protection of the ozone layer (1985) and its famous Montréal protocol (1987) which eliminated the use of chlorofluorocarbons, or CFCs).

So why not imagine a large-scale legal undertaking to ban the production and therefore use of certain plastics worldwide?

The difficulties such an initiative would face are numerous (see the comments in brackets below):

– securing the assent of all of the world's States (192) or a significant majority of them (which would require organising huge intergovernmental conferences with all of the difficulties that would imply, especially during the current crisis of multilateralism);

- the effective implementation of the ban across different territories through the use of incentives (replacement materials, assistance with the elimination process) and dissuasive measures (fines, shutting down activities), bearing in mind that two-thirds of the world's countries suffer from serious organizational and structural difficulties (the "weak state" problem referred to earlier);
- the fight against small-time and large-scale trafficking (any ban would necessarily result in a certain amount of trafficking);
- the impossibility for such a mechanism to be reversed, i.e. combating the past, present and future effects of plastic materials now the subject of a ban but still very much in circulation (this is the very hypothesis underlying the notion of a total loss of control).

In the face of all these difficulties, one might be tempted to think that the law could be put into the service of two major causes. The first is to fuel an illusion of control: every effort is made to ensure that the situation is once again taken under control. The second is to accept the consequences of an assumed total loss of control.

These two paths are not exclusive of one another, far from it.

But it is clear that the first, which supports the illusion of control, is more often explored than the second, in which the total loss of control is recognised.

This reality needs to be shaken up.

D. Modelling the risk of the total loss of control

The construction of a model is a task legal scholars are familiar with.

There are all kinds of models in law.

The distinction is generally drawn between theoretical models that intend to describe the law and the normative models that prescribe how it should be.

Here, the proposed way to model the visible risk of a total loss of control falls under the normative approach.

This approach is not based on prescriptions of the law in force since, as we have seen, the law tends to focus more on maintaining an illusion of control than on managing a total loss of control.

As things stand, nor does it have a political, ethical or practical (scholars would say praxeological) dimension, although it aspires to develop one over time.

It has an essentially doctrinal dimension.

The doctrinal legal considerations proposed here involve asking whether it is opportune to establish in legal thinking a model for the risk of a total loss of control.

This is not necessarily a quantifiable model, as would be the case for traditional visible risk approached from an accounting perspective (and it is for this reason that this has never been the case for any of the scenarios envisaged herein).

But it has the advantage of offering a kind of legal paradigm for a certain number of situations in movement, provided one recognises that they unfold in an environment in which there is a total loss of control.

Such an operation to model the risk of a total loss of control has already been undertaken in the past. Let's return to the risk of pollution.

Returning to the risk of pollution. The risk of pollution is marked by the occurrence of situations in movement which, at a precise point in time, escape the control of all stakeholders. A great many mechanisms already exist, particularly in law, to prevent the risk of pollution. This risk cannot be eliminated outright. There will always be circumstances where nobody is in a position to contain the situation in movement that has escaped all control.

Here, one might say that the total loss of control constitutes the risk paradigm. If the situation remained under control, there would be no more pollution, or at least it would be absolutely marginal, which is far from being the case.

It is with this mindset that we can approach our initial and systematic working assumptions.

Whether in the context of the release of greenhouse gases, the spread of all kinds of products and organisms, pandemics, the dissemination of information for the movement of persons, data, capital and waste, it is very clear that their environment is one of a total loss of control.

We can assert and inform all stakeholders that each time they release greenhouse gases, allow the spread of products and organisms, extract viruses or bacteria from their natural environment and bring them into contact with humans, or disseminate information, they run the risk of a total loss of control.

Similarly, we can achieve a consensus on the fact that the movement of persons, data, capital and waste is not in principle part of any controlled process. The primary state of such movement is that it escapes control—in some cases totally.

The total loss of control is the paradigm underpinning this movement. It is the model for the risk of movement.

Reintroducing control to an environment in which there is a total loss of control. Once we have raised the risk of movement involving a total loss of control, the aim is not to shrug our shoulders and, as legal scholars, consider that the loss of control ultimately leads to a sort of loss where the law is concerned, a kind of legal bankruptcy. On the contrary, it is to reintroduce control

in an environment in which it has been totally lost. This is exactly what has been done in response to certain pollution risks.

The legal approach to the risk of pollution perfectly illustrates the law's capacity to reintroduce control to situations that have completely escaped it.

Nuclear risk is one example among others, with uncontrolled leaks of radioactive material where a multi-layered and absolutely exorbitant mechanism was developed to manage the total loss of control over a source of pollution.

Once again, it is with this mindset that we can approach our initial and systematic working assumptions.

If we are willing to make the total loss of control the prism through which we endeavour to grasp the different flows at work in the scenarios already studied, then things can piece together to form a better understanding.

All of the existing control mechanisms can be analysed in light of the risk of a total loss of control. Rather than sustaining an illusion of control, they form pockets of control in an environment that is not under control.

Furthermore, and this will be the focus of the sections that follow, the risk of a total loss of control is such that it can underpin or reconfigure a set of solutions—already in place or yet to be thought of—which can then be re-read or constructed around a shared vision of the loss of control in which there is a redistribution of duties and self-limitation of rights.

II. Redistributing duties

The redistribution of duties in a situation in which there is a total loss of control over flows (B) can be seen against the backdrop of the emergence of new forms of solidarity—*de facto* and *de jure*—when they are correlated to situations in movement (A).

A. Emergence of de facto and de jure solidarity correlated to situations in movement

De facto solidarity can be a highly effective vector for legal construction around the powerlessness of humans to control flows.

To demonstrate this, let's take a short detour and look at the way this notion is referred to in European legal constructs before returning to our main focus.

Example of the role played by de facto solidarity in European legal order. In a statement (sometimes known as the "clock speech") issued on 9 May 1950 at France's foreign affairs ministry, Robert Schuman proclaimed that "Europe will not be made all at once, or according to a single plan. It will be built through concrete achievements which first create a de facto solidarity".[142]

The text, which had a political dimension, gave what is still considered today crucial impetus to the construction of European laws. EU law, historically referred to as "community law", had as its first ambition the creation of de facto solidarity between member States. By freeing up domestic markets (coal and steel to begin with, followed by gradual expansion to other markets), the aim was to make national economies interdependent on one another so as to encourage States to establish a "common" legal system. This led to the creation of shared legal institutions (including the Court of Justice and European Commission, Council and Parliament) as well as the adoption of a great many legal rules intended primarily to govern the two main European areas of movement, now known as the internal market and the area of freedom, security and justice.

This de facto solidarity, in legal terms, is reflected in a principle of loyalty, seen as a form of de jure solidarity between the European Union and member States, between European institutions and member States.

But recent events have shown that this de jure solidarity can be severely tested. One pertinent example is the attitude of certain member States (Hungary and Poland) to the European standard of the rule of law. Another is the difficulty for some European countries of coordinating their actions on challenging issues, particularly in times of crisis, as in the case of immigration (just one area among others that is linked to the focus of this essay).

But this de jure solidarity nonetheless remains a key driver of Europe's legal construct, and it finds its origins in the affirmation of de facto solidarity.

But what about our powerlessness when it comes to controlling flows?

De facto solidarity driven by human powerlessness in controlling flows and how this translates in law. If we try to establish a link between de facto solidarity, the idea of human powerlessness in controlling flows and how this is translated into legal terms, it can be said that by encouraging movement between the territories of member States, by (sometimes significantly) limiting their ability to control that movement, Europe placed its members and its population in a position where they could not control the flows at work, which resulted in the emergence of forms of de facto and de jure solidarity between them.

This analysis, which is valid for the most significant aspects of Europe's legal constructs, can be extended to many different contexts.

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142 For a reproduction of the speech in English: <https://europa.eu/european-union/about-eu/symbols/europe-day/schuman-declaration_en>.

The release of flows on very different spatial scales (local, national, regional, international, transnational, global, etc.) raises the question of the emergence of different forms of de facto solidarity due to our inability to control flows, something that can in turn lead to the emergence of de facto solidarity.

Movement that is out of control generates a state of porousness between territories and spaces. Because of this, these spaces become interdependent, leading to de facto solidarity between them in response to a shared challenge: the loss of control.

This de facto solidarity can exist to varying degrees.

For ordinary situations in which there is a loss of control, it can concern quite a low number of stakeholders.

For situations of total movement beyond control, de facto solidarity takes on a broader dimension. Whether in the case of our preliminary working assumptions (greenhouse gases, spread of products and organisms, pandemics, dissemination of information) or the scenarios we have examined more systematically (persons, data, capital and waste), our complete inability to control certain flows leads to conditions of great interdependence between all the different stakeholders. When the loss of control is total, it spares no-one, and nobody can stand out from the others through their capacity to take back control over the situation. The dimension of this circle naturally depends on the scope of the total loss of control (reminder: this may be a room, household, business, town, State, continent or the entire world). But in any case we all suffer the same fate. De facto solidarity arises on variable scales.

How does this state of affairs translate in law?

If movement creates a state of powerlessness, this reduces the margin stakeholders have to establish legal approaches to the situation at hand.

Naturally, they can always deny the existence of this state of powerlessness. This is what can be widely observed in response to the often silent risk of a total loss of control over movement.

But if there is impetus to move in the other direction, which is the goal pursued herein, then one must pay attention to the way in which the loss of control translates in law.

To try to translate in legal terms the state of potential de facto solidarity generated by our powerlessness in controlling flows, we must return to the normative space of flows.

Returning to the normative space of flows. Controlled flows can form normative spaces in which a potentially high number of rules and stakeholders are concentrated, with the interplay of legal rules converging to enable the smooth functioning of a situation in movement.

Earlier we looked at the example of a transatlantic flight that forms its own normative space and brings together the interests of those who actively or passively take part in the transport operation.

We have also seen that this model of a normative space of flows can be extended to situations in movement that escape the control of some or even all stakeholders.

Among the many examples considered above, it is worth returning to the case of a plane crash. This uncontrolled movement inevitably reshapes the circle of shared interests. New parties potentially become involved simply because new rights and new duties emerge within this new normative space of flows formed by the tragic outcome of the flight.

In the first case of controlled movement, adherence to the process poses no particular difficulty, at least for those who voluntarily respect it one way or another.

In the second case of uncontrolled movement, things are not so straightforward. One must ponder the possibility of whether or not new stakeholders can join the flow, so to speak, thereby reshaping the circle of shared interests.

To do this, there are two possible approaches: create a legal dialectic with the issue, treating it as a subject of the law, or broaden the way interests are defined.

Creating a legal dialectic. The question of creating a legal dialectic has come up in the context of nature, a subject of the law.[143] To institute nature, personified from a substantive and procedural point of view through legal animism in various guises (scientific in particular), is the objective of (so far limited) initiatives in positive law to treat elements of the natural world (e.g. river, forest) as subjects of the law.

The main difficulty in this type of approach is that it aims to extend the model of human rights to non-human entities.

There is a gap between these two worlds that must be bridged.

Here is one possible proposition: if humans don't control a certain number of flows that they themselves cause, no more than they control many of the flows produced by nature, and indeed no more than nature itself controls the vast majority of the flows it produces, then humans and the natural world can be said to suffer the same fate. They share a loss of control. It is therefore possible to try to establish a legal dialogue between them on this shared ground by making the natural world a subject of the law. This would mean creating a kind of legal dialectic between nature and humans to enable a confrontation between the natural spheres—the biosphere in particular—and human spheres—the technosphere in particular.

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143 See in particular the work in France of M.-A. Hermitte, «Nature, a Subject of Law?», *Annales. Histoire, Sciences Sociales* (2011/1), 73.

The shared loss of control among natural entities and humans could be used to justify giving each of these entities a legal personality such that they could be part of the interplay of rights and duties that may arise in a given situation.

If we do not establish such a bridge, or equivalence between the elements that come into play, then we cannot create any real dialogue between them. The interests of one side (elements of the natural world) will always be at worst trampled, and at best defended by the other (humans).

And the reality is that both sides face the same situations in which there is a loss of control, and these often tend to be closely intertwined. To tackle such situations appropriately, we must be able to make all entities present legally animate, so to speak.

One possible avenue is to recognise all of these entities as subjects of the law. In concrete terms, this means lending them the attributes of a legal personality comparable to those entities that face similar realities.

Such a process cannot, based on the justification of a shared loss of control, be of a general scope.

The idea is not necessarily to grant an anthropomorphic legal personality to natural entities with a set of attributes, rights and duties and their own heritage.

Rather, it is to recognise in a limited way the targeted existence of a legal personality in situations where there is a loss of control over flows involving both the natural world and humans, so that all parties can legally coexist as subjects of the law.

Let's look at an example.

The example of environmental harm where there is a loss of control over flows. This reading can be used for the extensive—albeit as yet limited—form of environmental harm, i.e. damage caused to the natural world, which has been enshrined in French law (2016 legislation, Art. 1246 et seq. of the *Code civil*).

French positive law as it stands provides that "Action for damages for environmental harm is open to any person who has the quality and interest to act, such as the State, the French Office of biodiversity, regional authorities and their consortiums in the territory concerned, as well as public bodies and approved associations or those founded at least five years prior to the date on which the action is formally taken and whose purpose is to protect the natural world and the environment" (Art. 1248 of the *Code civil*).

Given that environmental harm is very often the result of a flow in which there has been a loss of control—this is typically the example of pollution—why not recognise the possibility for ecosystems to exist through a structured legal personality, capable of defending the interests of the natural world alongside the interests of persons recognised under private and public law?

This proposition is nothing new, as pointed out earlier.

It is the justification for it that would be new.

The loss of control, associated with the phenomena of movement that affect both the natural world and humans, must be able to be tackled as a whole.

To do that, it is time to reflect on new forms of legal personalities that can, particularly at trial, enable all of the entities concerned, whether human or non-human, to exist.

Such legal personalities would be limited to the space of flows affected by the loss of control (such as the area subject to pollution).

This would avoid the pitfall of a comprehensive and permanent legal personality that we wouldn't know what to do with, in the case of the natural world.

These personalities would be made dormant once control over the flows had been regained.

In other words, phenomena in which there is a loss of control over flows are such that the intervention of new legal entities—in this case nature—can come into play as soon as the situation affects them.

But recognising elements of the natural world as having a new legal personality is not the only possible path.

There are other possibilities.

Broadening the scope of interests. Among other theoretical approaches, one path is to explore the notion of the scope of interests.

French academic Gérard Farjat presented this multifaceted notion in the form of prolegomenons as part of research located midway between persons and things.[144]

We don't need to present the author's thinking in comprehensive detail here, but it is worth noting that this is a notion which can reflect, in different aspects, the link that can be legally established between all entities likely to be affected by a situation in which there has been a loss of control over flows generated by humans.

Here are some of the main points (in inverted commas below) to emerge from Farjat's analysis and which are relevant to the focus of this essay:

– interests can potentially be read "in the plural"; we can therefore imagine that each situation in which there is a loss of control can potentially give rise to its own set of interests;

144 G. Farjat, "Entre les personnes et les choses, les centres d'intérêts, prolégomènes pour une recherche", *Revue trimestrielle de droit civil* (2002/2), 221.

- this allows us to move beyond the diktats of an alternative between "persons and things"; there must be intermediary (not to say interim) categories, if only because the law is not only a stabilised construct but must also be able to accompany incomplete processes under development; this is particularly true of flows and the loss of control thereof, as these are not, in essence, static or necessarily lasting situations;
- interests form "constructed orders"—the shared interest of the stakeholders who have lost control over the flows—that stem from "de facto notions"—the loss of control and the flow that involves de facto solidarity—"with variable geometry"—there are no two strictly identical scenarios of a loss of control over flows—which "do not necessarily grant the right to act" to all stakeholders—the natural world for example;
- they determine "points of imputation" for these de facto notions and form a "partial legal order", which means that they enable the convergence of legal expectations generated by the same object—the flow—, and this object is structured around a legal space—the normative space of flows—which is not necessarily intended to be comprehensive and self-sufficient insofar as it does not replace existing legal orders (e.g. national, international or European legal order), but rather is added to them, as in the case of the datasphere studied earlier;
- finally, these interests guide an objective of "strengthened protection for the interests in play", i.e. those of all of the entities that suffer from the loss of control over the flows, including in their total dimension.

Based on this analysis, the loss of control over flows can be considered to give rise to interests the object of which is risk.

Returning to the visible and silent risks of losing control over flows and the definition of interests. Among other examples, we have identified pollution as a potentially visible risk of total loss of control over situations in movement. For this risk, it is absolutely certain that the law tries to organise itself around shared interests in a way that gives it ample room to think about the interplay of the many different stakeholders likely to intervene actively (parties responsible, insurers, guarantee mechanisms) or passively (victims and rights holders) in the way risk is controlled.

The above example of dealing with environmental harm and how it has been enshrined in French law also reveals the law's capacity, in all of its complexity, to take into account interests shared by different kinds of public and private stakeholders.

The very numerous hypotheses of silent risks of ordinary or total loss of control over flows can also be read or re-read in light of the scope of interests.

Whether in relation to persons, data, capital or waste, each situation involving the loss of control over the flow that the law tackles can see the emergence of a circle containing the different stakeholders who, whether they like it or not, share the same object: the loss of control over a flow.

Based on the notion of defending the interests in play, this overarching perspective allows us to extend that of the normative space of flows which we have addressed on several occasions.

When a flow is under control, the various interests take care of themselves, as we saw earlier.

But when control is lost, whether in part or in full, it takes on a much more explosive dimension which must then be organised around a concept that is both broad and malleable. This is where the scope of interests comes in: they make it possible to build an approach to risks, new risks in particular, with all stakeholders, whatever their essence—human or non-human.

In the case of persons, data, capital and waste, the scenario would not involve on one side the stakeholders of controlled movement, and on the other those facing a loss of control; on the contrary, all parties must be brought together as part of a complex and multifaceted process of movement that can engage them all legally.

B. Reflecting on the distribution of duties in an environment of lost control

In an environment dominated by a mindset of control, each stakeholder is inclined to position itself to determine whether or not it intends to take the situation in movement under its control.

Binding mechanisms can of course compel stakeholders to adopt measures of control (to prevent risk, form guarantee funds, take out mandatory insurance, etc.). This is the case of certain pollution risks.

But these parties remain free to decide whether or not to engage in an action or activity that involves taking on the risk of losing control over flows.

This manner of identifying the problems faced no longer works in an environment in which mindsets are dominated by the loss of control.

Each time stakeholders are unable to escape this loss of control, none of them can place the risk of losing control outside its perimeter, including its legal perimeter.

Everyone is involved, as an active or passive subject, and no doubt to varying degrees but in a way that is very real.

In such a scenario, the question is no longer “who controls what?”, but is now “who suffers the lack of control?”

This perspective reversal can be observed in all kinds of phenomena.

It is particularly striking when the loss of control is total, meaning no stakeholder is spared.

It can either allow the existing mechanisms for the distribution of duties to be re-read, or new mechanisms to be thought up.

Loss of control: re-reading the existing mechanisms for the distribution of duties. Under this approach, it is possible to re-read the existing mechanisms for the distribution of duties.

By looking at the interests shared by all entities affected one way or another by the loss of control, it should be possible to reconsider the analyses. This does not mean formulating entirely new propositions but rather re-reading a certain number of positive law tools based on the circle of persons affected by the loss of control.

To illustrate this, we will return to our nomenclature of examples of movement, distinguishing in relation to total movement between the cases of persons, data, waste and capital.

An example in relation to persons: revisiting relocation mechanisms. Following the Syrian crisis in 2015, the European Union tried to put in place tools to regulate migratory flows from third countries with the aim of redistributing asylum requests or international protection applications across the different member States and thereby avoid only some countries—the most exposed—having to face these alone.

As the European institutions have themselves recognised, this mechanism did not work since few States really played their part in the effort to establish loyal cooperation.

A new mechanism is currently being studied and was presented in September 2020 by the Commission under the name "New pact on migration and asylum".[145]

Here's what can be said about it.

If we apply our reading of the loss of control based on the distribution of duties across all parties affected by movement, we see that the proposition appears to hold up rather well.

The Commission has noted that the current mechanism suffers from "serious inadequacies" and "the complexity of managing a situation which affects different member States in different ways".

It issued the following statement: "A new, durable European framework is needed, to manage the interdependence between member States' policies and decisions and to offer a proper response to the opportunities and challenges in normal times, in situations of pressure and in crisis situations: one that can provide certainty, clarity and decent conditions for the men, women and children arriving in the EU, and that can also allow Europeans to trust that migration is managed in an effective and humane way, fully in line with our values".

This explains the idea that the new pact "recognises that no member State should shoulder a disproportionate responsibility and that all member States should contribute to solidarity on a constant basis".

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145 For a presentation of this system by the EU Commission: <https://ec.europa.eu/commission/presscorner/detail/en/ip_20_1706>.

In other words, within the European space the loss of control compels all stakeholders to come up with shared solutions that result in a shared distribution of duties incumbent on the authorities of all member States.

However, the remainder of the presentation of the new pact is at odds with this initial ambition.

Without going into the detail, two points should be retained in particular.

First, much effort is deployed in the communication from the Commission to show that the situation can be brought back under the control of stakeholders. The weakness of the existing mechanisms recognised at the beginning of the communication is quickly forgotten and replaced by the assertion of a regained European ability to control the movement of persons from third countries. This tells us that we are manifestly unable to come up with solutions under the paradigm of a loss of control. In order to justify an initiative, we must convince ourselves absolutely that the situation will once again be brought under control.

Second, the ostensible solidarity between member States is broken by giving them the possibility to choose between "relocating on their territory" applicants for asylum or international protection who issue their request upon entry into the EU and "return sponsorship", i.e. support returning those whose request is denied. One can hardly speak of solidarity when the same duties are not taken on by all member States, and especially, as is the case here, when the duties distributed between them pursue diametrically opposed objectives of reception and exclusion.

One could choose to be satisfied with this discourse of compromise, which reflects the profound disagreement between the different parties involved when it comes to dealing with asylum and migration.

One can also usefully criticise it through the prism of the loss of control. It is because the situation is out of control that the parties affected by movement should show real solidarity in distributing the duties incumbent on them.

An example in relation to data: revisiting the contemporary approach to the digital economy. The major digital platforms (the Big Five among others) are stakeholders who have introduced an undeniable novelty and differ radically from other public or private entities in many respects. They are built on two essential pillars. The first is the direct relationship they maintain with their "users", to whom they provide easy access to services. The second is the ecosystem they put in place which allows many service operators to go through their platform to reach out to users. Platforms are above all intermediaries. They put consumers of services in contact with the producers of those services as part of a two-sided market. This is true, for example, of an urban transport platform, which brings together drivers and passengers. It is also the core characteristic of the world's first major platform, the search engine, which serves as an intermediary between knowledge that has been produced—or least pages on the web—and people looking for content via the engine. Platforms

generally don't have any interaction with their users other than the exchange of data. In the case of a search engine, keywords are exchanged in one direction and an ordered list of relevant pages in the other. Beyond this exchange of data strictly speaking, platforms also enable financial transactions, which can be seen as a specific case of exchanged data. Platforms therefore bring entities together solely through the database at their disposal, entirely within the digital layer of the technosphere, with no interaction other than digital with those in the physical world. In so doing, they supplant stakeholders in the physical world who offer services and also ensure their delivery to customers, as in the case of urban transport and taxi companies.

These key players of the "New World" increasingly face the realities of the traditional physical world and of its inhabitants. Whether it's the application of data protection mechanisms, social law, competition law, consumer law, intellectual property law, housing law, tax law (etc.), we are seeing the development all around the world of actions that are compelling operators who often see themselves as free from the shackles of on-the-ground realities to return to earth. For proof of this, one need simply search for case law involving the Big Five in legal databases to discover that many fronts have been opened up by public or traditional private parties.

Faced with these tensions, two different analyses are possible.

The first is to defend the idea of the lasting existence of two distinct environments, digital space on the one hand and terrestrial space on the other, with all kinds of prognoses about the possibility for one or the other of asserting its capacity to control the situation, and data flows in particular.

The second is based on the observation that the forms of movement that occur between these two worlds largely escapes the control of all stakeholders, particularly when it comes to the flow of data, and so we must broaden the circle of interests to include all of them in both the terrestrial and digital worlds. The redistribution of duties cannot be one-way or done separately. The approach must be broad, with a balance of power that stretches to all parties.

It is clear that only the second of these two approaches can truly account for the many stages of conflict we are seeing today. For this, a useful point of departure is that movement inevitably involves a loss of control, whereby in the same legal space a large number of stakeholders are present who can participate actively or passively in the redistribution of duties.

An example in relation to capital: revisiting the justifications for the "Tobin tax". The term "Tobin tax" refers to very different realities in monetary and financial respects.

The idea to tax certain transactions on the capital markets originally came from economist James Tobin (1972) as a way to stabilise monetary transactions with the aim of limiting the risks of instability inherent in speculative transactions that exploit the variability of exchange rates.

It has now become a generic term used to refer to varied forms of taxation on financial transactions but which in most cases have not moved beyond the proposal stage.[146]

In the most recent discussions, sharply reactivated by the 2008 crisis, two major justifications are usually put forward: limit the volatility of financial markets and achieve objectives of redistributive justice.

To put things simply, these proposals stumble on two points: their effective propensity to stabilise the markets and their acceptability among those most immediately concerned by the payment of the proposed tax.

The question to be asked is whether a link can be established between the movement of capital beyond control and a broader definition of interests that would justify redistributing duties via a general tax.

As long as we are talking about fuelling the illusion of control, which as we have seen is preponderant when it comes to the movement of capital, there is nothing to suggest that the most active players on the market are willing to endorse such a mechanism, usually seen as an additional fiscal measure and one that remains possible to circumvent provided it does not have a truly global reach.

However, if one could secure recognition that the environment, generally and over time, remains out of control, then the interdependence of markets caused by the uncontrolled flow of capital may be an acceptable foundation for a broader definition of interests that includes all stakeholders, or at least the vast majority of them, affected by this movement.

The idea of a generalised and lasting loss of control that such a mechanism is trying to prevent (objective of stability) or, failing that, correct (objective of redistribution) is the best argument that can be put forward in support of a "Tobin tax" shaped according to the parameters of market policy.

It is in that respect that efforts must be made and, of course, this issue must be debated.

An example in relation to waste: revisiting the mechanism of extended liability. We have already looked at the mechanism whereby liability is extended to the producer. This mechanism was developed, particularly in relation to the environment, to spread the load of treating waste and dealing with the damage it can cause across a range of stakeholders, including in particular those who cause it: the producers of materials that are later abandoned or the object of defection and therefore become waste.

This trend towards the extension of liability, with all that it implies, particularly in terms of causality, can be correlated by the assertion of a normative space of flows, which we worked on in the previous chapter.

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146 See for example in France: <https://france.attac.org>.

To complete this reasoning, it may be interesting to consider the loss of control and establish a link with the broadened definition of interests and the impact it can have on the distribution of duties between the different stakeholders in movement beyond control.

The extended liability of the producer of waste is a way to reintroduce scenarios of lost control as part of the redistribution of duties.

Given the scale of the phenomena at work when it comes to the spread of waste (with the iconic scenario of plastic), the concept needed to structure legal policies in this area is that of liability (in its broadest sense) extended to all stakeholders—from the producer to the consumer.

As in the previous cases, this is not so much about advancing new solutions as it is about re-reading the many existing mechanisms (taxation, collection, recycling, production bans, usage, circulation, etc.) through the prism of a generalised loss of control that justifies the deployment of duties and the broadest possible distribution thereof.

Imagining new ways to distribute duties based on loss of control. For this last section on redistributing duties based on the notion of loss of control, we will return to two notable scenarios in which the loss of control is total: the release of greenhouse gases and its impact on our climate, and pandemics and their impact on the way emergency measures are taken.

Let's begin with the first one.

The example of climate governance. The release of greenhouse gases is among the main examples of total loss of control on a planetary scale, and it is an issue that is of central importance in the organizations that contribute to global climate governance.

During the discussions that take place at UN climate change talks (COP), the central issue raised is that of public policy and civic measures to be taken in order firstly to reduce carbon emissions on a global scale and limit global warming to a certain threshold (1.5℃ with a maximum limit set at 2℃) by a fixed deadline (2030), and secondly to adapt those places, especially supercities, already threatened by the effects of these omissions, rising water levels in particular.

A new proposition could be to invite this type of organization to open up a second chapter in its discussions and negotiations that would not replace the current discussions but rather complement them. Its purpose would be to answer the following question: how can we anticipate scenarios in which the global circulation of greenhouse gases will reach uncontrolled levels, i.e. greater than those currently targeted? Such a process of reflection, which, don't forget, would complement rather than replace the existing reflections, would literally double the scope of the discussions and therefore of public, corporate or civic governance. No-one is pretending any longer to believe that the phenomenon can be contained to its causes and/or effects. We are now openly asking the question of which measures need to be taken in the face of a total and uncontrollable phenomenon.

By making it perfectly visible, this approach would allow us to clearly address the risk of circulating greenhouse gases over which all stakeholders have lost control, so that the greatest number can be included in a global and anticipated process of reflection on the distribution of duties.

The question of escaping control is one best asked in calm conditions, i.e. upstream of the crisis management situations provoked by exceeding the thresholds considered crucial (currently +2°C). From a pedagogic perspective, it would clearly be advantageous to lay out in public the scale of the questions to be dealt with if the planet's rising temperatures were to run out of control. In other words, the aim would be to accompany the changes in mentality that would be absolutely necessary in order to effect the changes in behaviours, both private and public.

Finally, spelling out the prospect of such a loss of control would be a much-needed and urgent opportunity to bring to the negotiating table issues of a level of violence if not equivalent, then at least close to, that which the planet would have to face if these thresholds were to be exceeded. Let's look at just one example. Now is the time to discuss whether, in the event that certain thresholds are exceeded, we should, by anticipation, provide for certain draconian measures such as a global ban on the use of certain energy sources or global taxation on those energy sources to such an extent that it would profoundly challenge the economic models underpinning them. Such a prospect may seem utopian from where we stand today. No matter. What counts is to trigger a discourse now on scenarios of extreme measures so that all stakeholders can be brought face-to-face with their responsibilities and prepare the groundwork for the day when policy upheaval will be provoked by the imminence of the crises to come.

In other words, facing the prospect today of a loss of control in the future is a way to rethink the distribution of duties in the long term. Such a prospect can only be considered if there is collective awareness about the state of movement beyond control.[147]

The example of managing emergency measures in times of "Covid-19". What about pandemics and their impact on the way we deal with emergency measures?

In tackling efforts of legal reconstruction based on the reading offered by the scenario—very real in the context of a pandemic—of a total loss of control over the flows to which we largely contribute, we must be able to reconsider emergency measures and the associated duties (restricting freedoms, imposing new duties, etc.).

The very principle of an emergency measure is that it is designed to regain lost control. Public authorities put in place exceptional mechanisms with the primary aim of having equally exceptional means at their disposal to take back control of the situation that has escaped them.

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147 For a presentation of this working hypothesis, see: "Climat au-delà du contrôle : gouverner l'ingouvernable maintenant ! – Point de vue", *La Pensée écologique*, vol. 1.1. (2017) – <http://lapenseeecologique.com/climat-au-dela-du-controle-gouverner-lingouvernable-maintenant/>.

On a global scale, albeit to varying degrees, we are currently experiencing this scenario (from 1999 to 2020) with Covid-19.

We must imagine the possibility of breaking away from this state of emergency that has now become almost permanent, which does not preclude the continued use of such tools when considered necessary.

Such a split is to be sought in a collective and assumed awareness of the reality of total loss of control.

Rather than imposing on ourselves the concept of control, something that regularly pushes us into failure, placing it in the hands of a small few (our leaders), something that tends to divide us, or continually debating the concept, something that undermines all interventions, whether political, scientific or even legal, we must open ourselves up to the loss of control so we can broaden the circle of interests at stake and thereby work towards a redistribution of duties.

If we are willing to consider the loss of control as total, then no stakeholder is in a position to say that it is not concerned by that loss.

Duties are then no longer imposed by some on others, but rather shared by all as everyone finds themselves in the same situation in which there is a total loss of control.

Shared interests extend to the circle of an epidemic (family, company, town, region, State, continent, entire world), reinforcing all of the movements of solidarity that one can or could observe in times of crisis.

This reading allows us to move beyond the debates that get bogged down on the legitimacy or illegitimacy of the restrictions imposed on rights and freedoms.

It raises the question of sharing duties in the face of movement where there is a total loss of control.[148]

III. Self-limiting rights

Rights, whether civil, political or social, fundamental or ordinary, public or private subjective rights, are generally understood as tools in the service of the offensive or defensive power[149] of those who exercise them.

148 For a presentation of this working hypothesis, see: "Covid-19 ou comment penser en droit l'illusion de contrôle des flux", *Revue des droits et libertés fondamentaux* 2020, n° 16: <http://www.revuedlf.com/>.

149 On this disctinction: A. Zabalza, "Défis écologiques et identités nouvelles : 'droits de la terre' et 'droit domestique'", *Archiv für Rechts und Sozialphilosophie*, 105 (2019/2), 254.

By laying down the postulate of human powerlessness in controlling manmade flows, we make the loss of control the prism through which the assertion of rights can be read and, if necessary re-read.

This opens up a general perspective of self-limiting rights. It allows us to rethink rights in situations in which there is a loss of control (A) so we can re-read them in terms of masses and units in movement (B).

A. Rethinking rights in situations of lost control

Rethinking rights in an environment in which control has been lost is possible from two diametrically opposed perspectives.

The first, and the one usually adopted, is to overemphasise the assertion and level of protection of rights in the hope of recovering the control that has been lost. This creates imbalances. By asserting the existence of super rights, we place the conduct of human actions under the ceiling of certain objectives, the hegemonic interpretation of which precludes us from taking into account other interests that could be the subject of other forms of political, but also legal, arbitration.

The second, which is the one advocated here, is part of a process to self-limit rights that endeavours to assume the consequences of the loss of control.

But what does it mean to self-limit rights?

To answer this, without claiming to be exhaustive, we will look at three things: awareness of rights, the commons and proportionality.

Let's begin with the awareness of rights.

Re-reading our awareness of rights. There is such thing as legal awareness. It is the way individuals think about the rights they have. Their thoughts may be formed from opinions, ideas, concepts or meta concepts. They may have a shared dimension within a given society or a given era. They are often vague and unclear.

By using legal awareness as a way to re-examine the rights granted to individuals in an environment of lost control, we are countering the liberal or neoliberal view that movement is structured as part of a process to make things secure.

This counter approach now has a name, thanks to the increasing number of studies on the development of an "environmental" awareness that is beginning to question the dominant mindset.

When it comes to rights and their self-limitation, this type of proposition can open up very interesting perspectives.

We will draw on one analysis, chosen among others, that was part of recent research based on private law conducted by two authors in the United States and Italy.[150]

The relatively short essay is in the same vein as critical studies of the law that have firmly condemned the work of legal scholars "content" to describe the law, usually in tight circles and with no effort to discuss its foundations or purposes. The authors get straight to the point, denouncing what they call a "bourgeois" and "hegemonic" private law based on the "lies" of "scientific positivism" and "legal professionalism". It is this law that they set out to contrast with the "dramatic" transformations of the contemporary world, offering their own "counter-hegemonic interpretation". They are referring to three transformations: ecology (the essay begins with a strong reference to the Anthropocene), technology, particularly in the area of communications, and the profound changes at work in the balance between public and private interests.

The central idea in this work is to offer a reinterpretation of private law, imbued with what the authors call "ecological awareness". This expression may leave the reader dubitative, but it does offer grounds for reflection, especially when the authors posit that many of our positive law practices are underpinned by neoliberal unawareness, by a kind of reproduction of general thought that one never thinks to question, especially when the legal solutions it leads to are "formally" legal.

Having laid down the ambition of their work, the two authors go on to review four key areas of private law.

The first is property law. They offer a broad historical overview: Roman tradition, feudal tradition, natural law, the French Revolution and the German interpretation of subjective law, the Industrial Revolution and the social function of property, neoliberal reactions and European regulations (EU). They raise the issue of the new boundaries of property law, defending the idea that a capitalist model can survive beyond the exclusive modern paradigm of private property. They invite the reader to examine or re-examine individual and collective relationships, the relationship between citizenship and ownership, the inclusive dimension of property and the concept of the commons.

The second relates to the concept of legal personality. The roots of this concept, forged for commercial companies in the 17th century, is the point of departure for an analysis of the growing power acquired by private multinational entities, described as veritable manufacturers of a global private law. The authors set out to offer a re-reading of the rules that apply to such entities. They are particularly critical of avoidance practices that the law could better combat if it was driven by "ecological thinking".

The third area is contract law. After a historical overview, the authors emphasise the objective (neutral) dimension acquired by an institution in the name of economic efficiency. They defend a model of contractual justice that fully takes into account shared goals which, especially on a local

150 U. Mattei, A. Quarta, *The Turning Point in Private Law* (Edward Elgar, 2018).

level, could achieve convergence between public and private actions. Environmental concerns are held up as an example.

The final area is tort law. Alongside other developments, the authors denounce the paradox of declining responsibility encouraged by the interplay of liability without fault and guarantees. Those held responsible pay the price, but without having to explain their conduct. We need to reintroduce subjects to the debate, in particular about the role we all have to play in considering shared risks.

Whether or not one shares all of the propositions to reinterpret positive private law through the "ecological" prism defended by the two authors, the heart of their message cannot leave the reader indifferent, especially if one tries to establish a link between this type of reflection and the one we have taken on in this essay in terms of the loss of control over flows generated by humans.

The work cited does not directly tackle the question of flows.

But we can nonetheless retain the idea that ecological awareness can call into question the existing legal constructs which, according to the authors, are steeped in neoliberal unawareness. As has been pointed out, the same is true of the "circulation–security" tandem, which should be discussed through the prism of lost control.[151]

Re-reading the commons. The polysemic and particularly rich concept of the "commons" also allows us to consider the self-limitation of rights in terms of the sharing of rights. We are talking here about rights that may be associated with assets. But the expression has a much broader scope: sharing rights in general, activities, resources, knowledge, etc.

Reflections on this issue are contemporary, multidisciplinary and global, although, as in other subjects, history allows us to relativize the novelty of discourse, which it must be said is currently in vogue.

Without aiming to draw up a genealogy or outline the topography of the burgeoning work addressing this issue, we can nonetheless draw on the major collective efforts to define a myriad of terms that resonate with the notion or idea of "commons".[152]

For example, we can look at the illustrated and documented definitions of a few expressions that reflect the perspective adopted in this essay: "common goods" and derivative terms, "community" and derivative terms, "water", "space", "information", "Internet", "currency", "sea", "heritage", "*res communis*" and "territory".

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151 On the subject of a re-examination of legal constructions (in this case of private law) in the light of an ecological imperative, see also the various contributions proposed in: M. Hautereau-Boutonnet, S. Porchy-Simon (eds), *Le changement climatique, quel rôle pour le droit privé ?* (Dalloz, 2019); S. Demeyere, V. Sagaert (eds), *Contract and Property with an Environmental Perspective* (Intersentia, 2020).

152 M. Cornu, F. Orsi, J. Rochfeld (eds), *Dictionnaire des biens communs* (Presses Universitaires de France, 2017).

"Movement", "loss of control" or derivative terms do not feature (this is a trend generally observed in publications of this kind).

Yet we can reflect on the importance that the phenomena of movement involving a loss of control can have in the sharing of what is referred to as "commons".

For if we consider the crucial role played by loss of control scenarios in the formation of normative spaces of flows that are shared by all parties concerned, then a link can be established between phenomena of movement and the loss of control on the one hand, and the affirmation of "commons" on the other.

This link is not without consequence when it comes to the self-limitation of rights.

The "proprietary", exclusive and absolute models so valued in the doctrine of the commons can, in such phenomena of movement beyond control, be found to be of relative value in a way that has yet to be really explored.

Re-reading proportionality. Among other meanings, the principle of proportionality, in a conflict scenario between two rules with equivalent value, allows them to be weighed up against one another so that the one which best preserves the interests at stake can prevail.

This principle has been extensively applied in the international and European context every time that a rule governing movement (free trade, free movement, secondary freedoms) is confronted with the pursuit of an opposing objective.

Traditionally it has played an important role in domestic and public law (proportionality in the exercise of public power) as well as criminal law (proportionality of sentencing). Nor has private law been spared, as the changes in judges' rulings have shown (particularly in France), including in higher jurisdictions, where judges increasingly engage in the ostensible application of the principle of proportionality.

If this tool is being used more and more, it is because of the proliferation of rights. The more equivalent rights there are, the more conflicts will be settled using the proportionality test.

But the theme of proportionality can also be seen in relation to the developments explored in this essay when it comes to movement and the loss of control.

Situations in movement create porousness between areas of the law which had previously been deliberately kept compartmentalised. Because situations shift, because they are no longer necessarily under control, we are increasingly seeing confrontation between rights which relate to different legal objects. This observation can be made in the presence of rights defined by legal systems at different levels (in particular national, international and European). But it can also be made within a

single legal system as a result of the increasingly frequent decompartmentalisation of legal subjects (public–private, constitutional–ordinary, etc.).

This otherness between rights results in the neutralisation of conflict rules that only work well if the rules in question have a common denominator. If this is not the case, then the (apparent) mismatch must be approached in the right way. To do this, there is really only one legal tool available: proportionality, which explains the success it has had.

B. Re-reading rights between masses and units in movement

How can we try to translate into the utterance and exercise of rights this notion of self-limitation of rights in situations of movement in which there is a loss of control?

The answer is to be found in the different ways rights are treated depending whether they are applied to a moving mass or unit.

After a detour to look at movement in nature, we will return to our central theme: manmade movement.

A detour via movement in nature: air, water and land. The legal status of objects as holistic as air, water and land has fuelled long-standing and rich discussions about the sharing of rights. The dimension of each of these objects is such that it cannot be fully appropriated, which makes them resistant to any exclusivity, whether in public or private form.

For at least two of these three objects, there are grounds for re-reading the utterance of rights due to the inherent loss of control in movement.

If we take the two most established examples of "commons", air and water, we see that in both cases we are talking about masses whose primary feature is that they cannot be fully appropriated by humans. At a rudimentary level, i.e. in terms of their intrinsic characteristics alone, and even before considering any question of their public or private utility, air and water are shared assets since humans and human technology are unable to capture them entirely.

This lack of control clearly arises because air and water exist in masses. And these masses have two essential characteristics for the purpose of this study: they consist of large-scale circulation that escapes human control.

But air and water are not only masses. They also form units that can be legally captured (a canister of air or a bottle of water).

And so we see the parallel development of two distinct legal regimes: rights over water and air taken as masses that are shared, and rights over water and air taken as units which can be appropriated.

This coexistence of multiple legal regimes necessarily leads to scenarios involving the self-limitation of rights. This is because legal regimes are duplicated for masses and units, because the rights at stake must strike balances in respect of the different concepts examined above: the commons, which we have just referred to, but also awareness of rights and proportionality. A right over a mass finds its limit in the right over a unit, and vice versa. And so they must be made to cohabit, meaning limits must be assigned to them.

A similar analysis can be extended to land, even though it does not have the same features of movement as air and water.

But in the cases of air and water, the analysis allows us to establish a bridge with other objects, whose movement is an integral part of human activity and can lead to situations in which there is a loss of control.

These other objects are of course the four categories systematically examined in this essay: persons, data, capital and waste.

A look back at manmade movements: re-reading rights between masses and units (persons, data, capital and waste). In my efforts to analyse the modalities of movement, I have systematically developed a distinction between the approaches to persons, data, capital and waste in terms of masses or units.

An illustrated presentation of the duplication of the law governing one (masses) or the other (units) has been proposed.

Without the need to return to these explanations, it may be useful to illustrate how the duplication of legal regimes, in response to movement beyond control, opens up the perspective of self-limiting rights.

The phenomenon can be described generally. The rights associated with masses are distinct from those associated with units, and so it is important not to confuse them or insist on associating one set of rights with the other. It can happen that these rights come into confrontation, with the need for arbitration to determine which one should be prioritised based on reasons that can be laid out in reference to the concepts seen above (awareness of rights, commons and proportionality).

When applied to the four objects studied herein, one way to illustrate this directive for interpretation is as follows:

– in the case of persons, it is important not to confuse the right to asylum (unit) with the right to immigration (mass), the former must not be used as a tool to serve the latter, and if there is a clash between the two, we must be able to clearly say if and why one is prioritised over the other (this would avoid a lot of two-way hypocrisy: immigration is a tool against asylum and asylum is a tool against immigration);

- in the case of data, it is important not to confuse an individual's rights in relation to his or her personal data (unit) with the law on masses of data, the former must not be used as a model of valid ownership to control the latter, and if there is a clash between the two, we must be able to clearly say if and why one is prioritised over the other (unit-based approach against the formation of a mass or, vice versa, the formation of a mass against a purely unit-based approach);
- in the case of capital, the obvious porousness between units and masses does not make it impossible to distinguish between the rights associated with each, naturally avoiding overlaps between them; the typical example is that of cryptocurrency, which, beyond the pure creation of assets, can upset money supply policies, which are the primary remit of central banks (an example is Facebook's much talked about Diem project but which has been more discreet of late);
- in the case of waste, it is important not to confuse the legal regime covering units of waste with that which governs masses of waste, the former must not be used as a tool to serve the latter, and if there is a clash between the two, we must be able to clearly say if and why one is prioritised over the other (an example is plastic, where it is possible to eschew the waste treatment approach and instead introduce an outright ban on its production and use, with the aim of eliminating the formation of masses of plastic on land, in the air and in the water).

Conclusion

If I had to sum up the general tone of this legal essay intended for a general readership, I would say that the objective has been to depict human powerlessness in controlling manmade flows as a utopia for the law.

Even beyond its constructs, the law deliberately represses the scenario of the total loss of control over movement.

There is nothing surprising in this. The law is an instrument of constraint and therefore all-powerful. Rights are attributed to entities and individuals so they can invoke their capacity to defend themselves and conquer. The evolution of the law is in crescendo in this regard. We are seeing an inflation of rights. Legal utterances are constantly being expanded in a way that arms legal subjects so they can maintain order and public security or combat public powers or private violence.

Naturally, the reality lags far behind these legal changes. How effective are all of these legal mechanisms? How many people on earth are truly in a position to invoke their rights?

But the law, in its constant quest for power, continues its tireless fight against breaches of its utterances by reinforcing legal arsenals, expanding both the subjects and objects of rights, and increasing the number of locations in which they can be deployed, etc.

To postulate that the law can construct itself on humans' inability to exercise control is to counter all of the most widely accepted analyses of the power of humans and the power of the law.

If we are to reverse these approaches that push this state of powerlessness outside the perimeters of the law, we must find a way to recognise it.

This can be done through the notion of utopia.

Utopia can be one of the ways to approach phenomena in which there is a loss of control over flows and which the law has not been willing to recognise as legal objects.

Rather than openly asserting that the law is wrong, which strictly speaking doesn't mean anything in law, we can try to invite it to open up to human powerlessness in controlling manmade flows as a kind of utopia that can feed into a process of legal reflection.

This would be an ameliorative utopia.

Here is how we might try to define it.

It expresses the profound wisdom and tremendous humility of humans who recognise, in an island (*Utopia*) of their thought, that they are not always in a position to control everything. Humans allow themselves to be convinced by the notion that their control over the flows they themselves generate is not always a given, on the contrary. This acceptance makes them less vulnerable, they become stronger as they manage to free themselves from an illusory control that systematically places them in a position of failure. This growing awareness is made all the more important by the fact that the flows in question are those invented through human ingenuity. Technology releases flows for the greatest benefit of mankind, but its flipside—the loss of control, which may even be total—is inextricably linked to it. Ultimately, the state of lost control over manmade flows joins the universally accepted fact of our loss of control over natural flows.

This utopia builds on the heritage of a particularly important stream of philosophy: stoicism. In every matter and without any fatalism, we must be able to distinguish between that which depends on us and that which does not. This utopia also feeds into the various philosophical branches used to address the theme of resilience.

Although one might not necessarily agree, it stems from the enlightened doomsaying that has been addressed by theorists.[153]

It enriches an approach to crises that cannot be based solely on the framework of harms[154] or risk management.[155]

It carries the critique not of capitalism generally but of a dark individualism[156] and does not seek to oppose rights, freedoms and nature but rather cause them to resonate with one another.[157]

It enables us to struggle against conspiracy theories which would have us believe that the situation (such as the Covid-19 crisis) is under the control of a small few to the detriment of everyone else.[158]

Lastly, this utopia can usefully be developed through a historical perspective. The foolishness of humans today who ultimately believe they control the flows they generate has not always been observed, far from it. What may seem like a utopia today has in the past been analysed as a preponderant reality in public and private actions intended to prevent the risk—experienced collectively—of a total loss of control.[159]

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Rethinking Flow Beyond Control

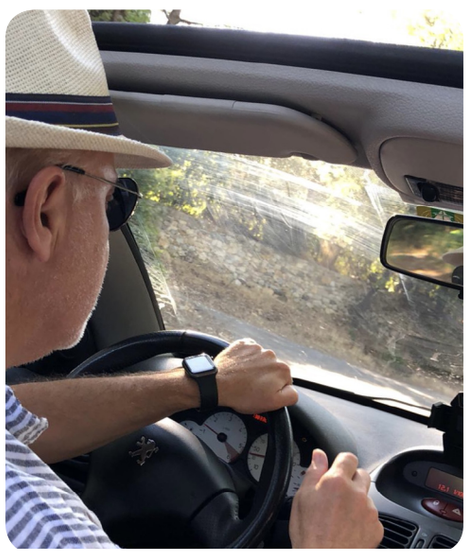
An Outreach Legal Essay

In his 1978 lecture at the *Collège de France* on the theme of "Security, territory and population", Michel Foucault established a link between "circulation", "security" and "space". He depicted the approach to circulation in the 17th and 18th centuries, based on legal tools such as international agreements and national or local regulations, as the expression of a desire to secure flows in the different spaces (maritime and terrestrial).

The objective of this legal essay, intended for a broad readership, is to counter this analysis by arguing that, for a certain number of major forms of circulation (release of greenhouse gases, spread of products and organisms of all kinds, pandemics, dissemination of information, movement of persons, data, capital, waste, etc.), mankind is living with an illusion of control.

The question is no longer who controls what, but rather who is suffering the loss of control?

To answer this question, we must rethink our traditional models of circulation and control. All sorts of a priori approaches to circulation can be discussed (magical, liberal, social, ontological, fundamental, modal). As for control, we must recognise that it is perennially exercised in an environment full of holes.



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