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ELEMENTS FOR A THEORY OF THE FRONTIER

THE NOTIONS OF LIMIT AND FRONTIER

“Frontier” is included in the general category of “limit” (*limes*: a road bordering a field). But what is at the origin of limit, frontier? An authority, a power that can exercise “the social function of ritual and social significance of the line, the limit whose ritual legitimizes passage, transgression” (Bourdieu, 1982, p. 121). The limit, a traced line, sets up an order that is not only spatial but temporal, since it not only separates a “this side” from a “that side” but also a “before” and an “after”. This dual nature of the limit is at work in the myth of the founding of Rome. Any limit, any frontier, is intentional: it proceeds from a will; it is never arbitrary. Its legitimacy was originally established by a religious ritual and later by a political procedure.

Reading the studies on Indo-European institutions, we see that the idea is material and also moral: “‘Straight’ represents the norm:

Translated by Jeanne Ferguson

regula is the instrument used to draw the straight line that fixes the rule. Within the moral order, what is straight is opposed to what is twisted and curved" (Benveniste, 1969, p. 14): "We have to begin with this originally material notion ... to understand the formation of *rex* and the verb *regere*. This dual notion is present in the important expression *regere fines*, a religious act, a preliminary act of construction; *regere fines* means literally to trace frontiers in a straight line. It is what the high priest does for the construction of a temple or a city and determines the space of the consecrated area. The magical nature of the procedure is visible: the internal and external spaces are delimited and define the kingdom of the sacred and that of the profane, the national territory and the foreign territory. This tracing is done by the personage invested with the highest powers, the *rex*" (Benveniste, 1969, p. 14). Again quoting Benveniste, "We must see in *rex* not so much the sovereign as the one who draws the line ..."

The limit is the expression of a power in action; it is the primary form of the exercise of a power whose foundation is the work of transforming the physical environment as well as the social environment.

In the practice and/or knowledge of things, every living and active subject is confronted with the notion of limit. To think implies, *ipso facto*, a system of limits, the one constituted by language: "The limits of my language signify the limits of my own world" (Wittgenstein, 1961, p. 141). In fact, any action of relationship with the environment, of rapport between beings and objects requires the creation or recognition of limits. The idea of limit is ubiquitous: it is unthinkable and impossible to escape from it or withdraw from it. It belongs to that category which we may call invariable. However, its obvious necessity is repaid by the indifference in which it is held and the way it is disposed of by being taxed as arbitrary. As we shall see, this is not only an erroneous epithet but one without foundation, and is undoubtedly why we have neither a history nor a theory of limit (Moles, Rohmer, 1972).

A limit is nevertheless the foundation of difference; it accompanies all the great myths and all the cosmogonies: "God called the light day and the darkness he called night. And the evening and the morning were the first day." (Genesis, 15).

Romulus killed his brother who had dared to cross the sacred furrow limiting the future city of Rome. Thus, any creation is inaugurated by a partition of spatial and/or temporal limits. In this case, the limit brings about difference or, if you prefer, the difference brings about the limit. Difference and limits are essential, since “where difference is lacking, violence threatens” (Girard, 1972, p. 87). Therefore, the limit is not what is projected here by a line or there arbitrarily; it is the product of a relationship: “Any subject fabricates its relationships like so many spider webs with certain characteristics of things and intertwines them to make a network that supports its existence” (Von Uexküll, 1965, p. 27). Through these relationships, the subject satisfies or tries to satisfy his needs. In other words, he tries to obtain the amount of energy and information necessary for his structure (Laborit, 1971, pp. 2-3). It is during this process that there is a delimitation of a “mesh”, of a territory that contains “the ensemble of gratifying objects” (Laborit, 1979, p. 94). This “field of liberty,” as Moles and Rohmer would say, is not arbitrarily delimited; it is established by physical, biological, social, moral and statistical “laws” (Moles, Rohmer, 1972, pp. 23-24). How can its existence be arbitrary since it is woven of chance and necessity, in the meaning that Monod has given these terms?

Every “mesh” is the expression of a project, and limits constitute an information structuring the territory. We reencounter Laborit here: he writes, “It seems then that there is no longer an innate instinct for property. There is only a nervous system acting within space that is satisfying because it is occupied by objects and beings allowing satisfaction” (Laborit, 1979, p. 94). What does this mean? It means that the nervous system memorizes gratifying actions as opposed to others, that there is a learning process and that the role of socio-culture combines with that of biology. Following that, there is the emergence of a bio-social interface in which there is neither a reduction of the sociological to the biological nor an analogy between the sociological and the biological but an encompassing sociological level and an encompassed biological level (Laborit, 1979, p. 94). In all earthly species, from animals to man, we may observe the appearance of semic systems that allow marking, division and delimitation: in a word, differentiation (Ardrey, 1966).

In the geographical and political meaning we give it, the frontier is, in the end, only a sub-grouping of the group of limits. The class of frontiers is contained in the class of limits such as we have attempted to define it above. The process of the emergence, evolution and stabilization of the frontier is similar to that of any other limit; it is merely more complex, in some ways, apparently more socialized and especially more entrenched in history.

The idea of frontier is not univocal since, in a general way, it may be defined in terms of zonality or linearity, of frontier zone or frontier line, of frontier or boundary; English has kept the distinction, while French hesitates between *marche* and *frange pionnière* to express frontier. For human geography, evidently, the *marche* (border), whose political connotation is ancient, or the *frange pionnière* that connotes a dynamism that is not yet exhausted are defined by centrifugal forces, while the frontier manifests more centripetal forces. In the one case, there is an orientation of a force toward the periphery and in the other orientation toward the center. The *marche* or *frange pionnière* is characteristic of perhaps rudimentary, or in any case, unfinished, socio-political relations, since they continue to integrate territories through successive oscillations or fluctuations. On the other hand, the frontier is the sign of societies having already reached an advanced degree of political and juridical maturity. The frontier is controlled from the center and obeys the positive law (Kristof, 1967).

The frontier zone (*marche* or *frange pionnière*) reveals a society in movement, more or less marginal, aggressive at the level of beings and things, often conquering, sometimes on the defensive (Turner, 1963). The frontier line expresses the limits beyond which a State may with sovereignty use coercive force. Thus, the first idea is better defined by the exercise of a factual power, while the second is based on a formal juridical power. It is tempting to say that historically one precedes the other, but this is not the case. They may be simultaneous and contemporary and characterize the same territory at different places and times.

THE EVOLUTION OF THE NOTION OF FRONTIER

The frontier as we think of it today owes much to that representation of a territory that is a map. This is why some have claimed that “the linear frontier is of recent date” (Guillemain, 1973, p. 259). If it is true that the Roman *limes* was not a frontier but the limit of military occupation, it is nonetheless true that the various walls erected in several parts of the Empire prefigure a modern linearity. The same is true of the Great Wall of China. What is it, exactly? A discontinuous series whose construction is somewhat irrational, because it swallowed up enormous resources. They were not political frontiers, in the modern sense, but frontiers of a society or, better, of a civilization, sedentary and nomad; they oppose not only two spaces but two tempos, two rhythms that are difficult to reconcile. Also, it is not entirely certain that these separations were “more advantageous at the level of internal use of space than at that of defence against external dangers,” as Paul Claval thinks (Claval, 1978, p. 25). *Limes* and wall distinguish an interiority and an exteriority that give them a double significance, at the same time zone and line. It is characteristic of empires that they support themselves, on their periphery, by a paradox: fix limits to impose order and an administration but transgress them to incorporate and integrate new spaces and subjugate them.

If there is an epoch during which the reality of the frontier was ignored or, more precisely, latent, it is the Middle Ages, because political organization was based “less on territorial considerations than on personal relationships” (Guillemain, 1973, p. 259). They were not political frontiers, in the modern sense, but frontiers of a society or, better, of a civilization, sedentary and nomad; they oppose not only two spaces but two tempos, two rhythms that are difficult to reconcile. Also, it is not entirely certain that these and his subject” (Benvenuti, 1973, p. 16). Obviously, this does not imply that the Middle Ages ignored delimitation; many texts refer to milestones, lanes, rivers, and so on, used to determine the limits of jurisdiction. Only, it was not a question of linearity as we think of it today.

The idea of a linear frontier emerges with the modern State in the 14th and 15th centuries. The etymology of the word “frontier” in different Indo-European languages is often to be found between

the 13th and 17th centuries (frontier in the 13th, confine in the 14th, *Grenze* in the 15th, boundary in the 17th). The modern State demands a linear frontier, at least as an idea, since it is territorial by nature. The bond between State and subjects or State and citizens becomes the territory that is the object of sovereignty: "The jurists of the modern State conceive territory as the object of an authentic right" (Benvenuti, 1973, p. 17). However, the linearity of the frontier will be more apparent than real long after the appearance of the modern State. Apparent through its tracing on the maps but in reality still uncertain; we have to wait for the 18th century, in particular the French Revolution, for the linearity to be confirmed: "These preoccupations are evident in the preparation of the Treaty of Basel and in the discussions connected with its ratification. It is not until the Treaty of Campo Formio, however, that we see a carefully-fixed linear frontier" (Guillemain, 1973, p. 261). This statement is perhaps somewhat peremptory, since unrecognized examples in which linearity is already confirmed could be found in the 18th century. On the whole, however, the Treaty of Campo Formio is a good reference point.

The idea of a natural frontier emerges in the 18th century more than in the 17th, in spite of what has been written on the subject: "In the 17th century it is rare to encounter an author who defends the theory of natural frontiers" (André, 1950, p. 2). The word "nature" is the key word in the 18th century, and its persistence in the matter of a frontier is equaled only by the illusion it evokes (Guichonnet, Raffestin, 1974, p. 19). The sentence of Brissot to Dumouriez is well known: "I will tell you an idea that is spreading here: it is that the French Republic should have only the Rhine as its border." Even though the notion of a natural frontier does not stand up under analysis, it assumed such a signaling value that it has endured until today. However, if we admit that the frontier, like any other limit, is the product of a relationship, we must inevitably reject the natural frontier, since otherwise it would be admitted, *a priori*, before any action could be taken, that morphological discontinuities serve as frontiers for men. In fact, using natural limitations for frontiers has been an instrument for annexation and oppression. Must we be reminded that "without a living subject, neither time nor space exist?" (Uexküll, 1965, p. 26). It is men who create limits and frontiers through their experience

and knowledge of space: “nature” creates only accidents on which, possibly, the statute of frontier may be conferred. A historical status which, consequently, may be questioned.

In any case, the natural frontier has caused reactions, and we have seen the emergence of the frontier as a limit of nationality defended by the Germans at the time Fichte was writing his discourses to the German nation. The Napoleonic conquests are not foreign to this emergence of nationality based on language, ethnics or culture. We know the controversies brought about by the issue of the principle of nationalities in the 19th century.

Parallel with the idea of frontier is the development of the frontier as limit of empire, defended by Curzon for the British Empire, especially in India. For Curzon, line and zone should be combined in a strategic perspective. The origin of the frontier as limit of empire may be traced back to the end of the 15th century, to the Treaty of Tordesillas, that established a line separating the Spanish Empire from that of the Portuguese. This imperialist conception of the frontier was well expressed by Ratzel and later exponents of geopolitics: a peripheral membrane that is deformed at the pleasure of the expansion of the State. Jacques Ancel’s expression that the frontier is a “political isobar” is also very significant on this subject (Ancel, 1938).

In opposition to the notion of an imperialist frontier, that of a negotiated or contractual frontier, subject to bi- or multi-lateral discussion, developed. In principle, it is a matter of abandoning force to fix a frontier by respecting the will of the people rather than that of the “princes.” The Americans who drew from this contractual spirit in their Declaration of Independence were adept at it. However, negotiations relative to the Canadian and Mexican borders have not always carried the stamp of this fine principle.

This historical evocation of the kinds of frontier is only partial and must be so. It suffices, however, to show the relational, and thus not arbitrary, nature of a frontier realized only through relationships that a subject, individual or collective, establishes with space. The frontier is at the same time experience and knowledge of a territorial reality in a given place and time. If the system of relationships changes, the pertinence of the frontier may be questioned as to its rapport with one or another activity. This does not mean that the line of the frontier must change, since in

that case we would be constantly engaged in modifications that would create an impossible lack of stability leading to chaos. We may mitigate the non-adaptations by minor corrections concretized by local adjustments, exchanges of equivalent terrain or by juridical institutional regulations. The frontier is a convention, but it is not all arbitrary. We will briefly take up this problem of the fixing of frontiers from the technical point of view.

FIXING THE FRONTIER

We had to wait for the 19th century, an era during which linearity became accepted, for rules to establish the frontier to be made precise. This occurred in three stages: definition, delimitation and demarcation.

Definition is the work of negotiators of treaties. It is verbal in concept, precise or relatively so as far as the geographical terms employed and the names of the places cited are concerned; none the less, there is a very noticeable gap with regard to territorial reality. If things were to stay that way, the frontier would have no reality.

Delimitation is the work of map-makers who, using large-scale maps and, today, aerial photographs, give a representation as precise as possible of the frontier, beginning with the map as document.

Finally, demarcation, which occurs on the terrain itself and should make the map and the territory coincide, "representation" and "represented." The carrying-out of demarcation may be through milestones, walls, hedges, lines of stones, rudimentary constructions or landmarks, when there is no possibility of basing the frontier on an irregularity or discontinuity in the terrain (Boggs, 1945).

It should be noted that these three sequences are most often separated from each other by considerable lengths of time, and that in any case the fixing of a frontier may require a very long time. Many frontiers in the world, in Africa, for example, are only delimitations; their demarcation has not yet been undertaken. The fixing of the frontier between the United States and Canada took from 1792 to 1925. The Franco-Spanish frontier in the Pyrenees, in practice fixed in the 11th century, was not delimited until the

second half of the 19th century (Dion, 1947).

What does this system of sequences in establishing frontiers mean in the end? First, an appreciable and often inestimable gain of information that offers States the possibility to know exactly the extent of their sovereignty, and it also eliminates at the same time most of the sources of conflict connected with uncertainty about boundary lines. But at the same time, also, this gain in information brings high costs, since the demarcation may be long and difficult. The frequent delay in the last phase arises from this fact. And yet, demarcation is indispensable, since it is a factor of order, stabilization and regulation.

Obviously, these three phases concern terrestrial frontiers, since it is difficult, even impossible, to conceive a demarcation for maritime frontiers and, *a fortiori*, those of space. That said, the definition and delimitation of maritime and spatial frontiers pose interesting problems.

Beginning with the great discoveries, especially those after the second half of the 16th century, maritime populations began to “think about” the sea: “The Dutch were the first to recognize the need for a maritime zone, contiguous to the seaboard and belonging to the State” (Sanguin, 1977). Two theories confronted each other in the 17th century, that of the “open seas” (*Mare Liberum*) defended by Hugo Grotius and that of “closed waters” (*Mare Clausum*) defended by John Selden. The second, of British inspiration, was set aside at the end of the 17th century because it was manifestly in contradiction with colonial expansionism (Sanguin, 1977, p. 139). It was in the 18th century that the Dutch jurist, Cornelius Van Bynkershoek, in his *De Dominio Maris Dissertatio*, established and organized a terminology that, for the most part, is still valid as far as its principle is concerned: that of territorial waters and sea. The extent of the territorial waters was fixed in the 18th century at three marine miles, in other words, about the reach of cannon fire, the idea being that territorial waters are those for which the State, from its coast, can ensure respect. After the Second World War, this principle was brought into question. In 1958 only some of the maritime States adhered to the three-mile limit (48 out of 73). The same year, the First Conference of Sea Rights held at Geneva set up the legislation of a contiguous zone of twelve miles beyond territorial waters (Sanguin, 1977, p.

141). The Second Conference (1960) accepted the principle of twelve miles as territorial waters. However, the movements of decolonization and independence on the one hand and on the other, economic concerns (fisheries, petroleum resources), as well as those linked to pollution, led to the breaking up of the relative consensus, and “in 1973, on the eve of the Third Conference on Sea Rights, of 111 maritime states verified in the world 7 percent claimed the principle of 200 miles and 50 percent of the twelve miles of territorial sea” (Sanguin, 1977, p. 141). Since then there has been a certain confusion or, in any case, very noticeable differences among the countries. We will mention that for the delimitation of territorial waters are used the methods of *replique*, the conventional base line or that called “envelope.” (Guichonnet, Raffestin, 1974, p. 40).

As for air space, the problem is still more complicated, since how far does the sovereignty of a State extend into space? Is there a ceiling to national sovereignty? (Sanguin, 1977, p. 161). If we apply the maritime principle of Bynkershoek, air space is the one that can be defended from the ground. Many theories exist in this regard: air is integrating but with free rights of transit. There is no international consensus on this, in spite of several conferences. With relation to the cosmos, a limit seems to appear between the cosmos and the atmosphere between 40 and 160 kilometres. From 1967 to 1976 conventions defined the status of the cosmos to avoid territorial claims on the moon, to avoid its militarization and to permit the exploitation of cosmic resources to all States (Sanguin, 1977, p. 163). Thus we may say that aerial traffic is limited, while cosmic circulation is still open, which is very important for anything involving telecommunication.

When it comes to fixing frontiers, we notice that the precision of the information diminishes from terrestrial limits to aerial limits, with maritime limits somewhere in between. Now, information is not an end in itself; it is needful to avoid confusion, the source of potential conflicts. Once again, it is a matter of fighting against the entropy of relationships by “informing” the systems of limits and frontiers as much as possible.

We may legitimately ask why it is necessary to devote so much effort to the fixing of frontiers and their establishment. The answer is relatively simple: the exercise of functions assumed by frontiers

is obviously made easier and more efficient by the existence of a precise tracing. Any limit, any frontier, is functionalized; a completely defunctionalized frontier has no more reason to exist and, consequently tends to disappear or “remain in the background.” The classic idea of most movements of political, economic and cultural integration that leads to “sealing” frontiers has no meaning unless the differences signaled by frontiers also disappear. Otherwise, it is a trivial, meaningless opinion and has no foundation.

The frontier’s functions are defined with regard to men and objects whose mobility is controlled, restricted or entirely excluded. The frontier is a veritable instrument at the disposal of political collectivities and may be classified with semic systems. Three functions are essential: legal, fiscal and control.

The legal function takes into account the predominance of a group of juridical institutions within a delimited, indeed, demarcated, area. It is the territorial area within which the positive law of a State is applied.

The fiscal function may have several objectives: defending the national market by taxes on foreign products; contributing to the State’s budget; and playing the role of a rudimentary economic policy. This is undoubtedly the function that often seems the most negative.

The function of control occurs for the surveillance of men and goods at the moment of crossing the border: control of migratory movements, capital and goods. All controls are effected through criteria that are the result of economic, social and cultural policies.

Here we should again mention the military function of the frontier and the ideological function that is manifested in “walls,” “iron curtains,” and “bamboo curtains.” Today, the military function is only significant if it is associated with conventional arms. As to the ideological function, it transforms the frontier into a limit of empire that differentiates not only two territories but also two “time rhythms,” two spatio-temporal organizations.

We may think that in a context of integration there will nevertheless remain one function, the legal one. This is why the idea of a “sealing” of the frontiers is an illusion. Besides, it would be an error since, as we pointed out above, any action implies taking differences into account. If frontiers have unleashed

Elements for a Theory of the Frontier

passionate reflexes, it is only because of the way they have been used and are being used and not at all because of their instrumental nature.

TYPES OF FRONTIERS

Political geography has known several systems of classification for frontiers: some simplistic, distinguishing between natural and artificial frontiers, others more elaborated, such as that of Boggs or Hartshorne.

Boggs' classification is morphological or phenomenological, using the expression of Stephen B. Jones. It is a very descriptive typology that may be qualified as objective. It includes four principal types.

The physical type in which the frontier has as a support a mountain crest, watershed, desert, river, canal or some other distinctive aspect. To some degree and in some tracts, the Franco-Spanish frontier responds to this type. The same is true for the Franco-Italian frontier, in the Alps, but there also we do not find a systematic application of the physiographical principle. The American-Mexican frontier of the Gulf of Mexico at El Paso coincides with the Rio Grande but later on it becomes a geometric type.

The geometric type is the one in which the frontier is determined by astronomical measurements and fixed on meridians, parallels, arcs or loxodromics. One of the oldest illustrations of this type is certainly the one resulting from the partition of the New World, attempted by Alexander VI in 1493, which gave Spain the lands located 100 leagues west of the last of the Azores, a partition that was revised shortly afterward and corrected by the treaty of Tordesillas, following reactions by the Portuguese. Many African frontiers belong to the geometric type and are in complete discordance with human realities, ethnic, linguistic or tribal. Though geometric frontiers are apparently convenient, their demarcation is much less so.

The anthropo-geographic type is delimited following cultural, ethnic, linguistic, religious and other criteria. It covers frontiers that refer to the principle of nationalities, among others. This type

of frontier that is usually favorable to collectivities since it tends to respect their unity is less frequent than one might think.

Finally, there is the complex type combining several factors that are simultaneously taken into consideration to determine the frontier. Many European frontiers are of a complex type.

Along a frontier of a certain importance, several types may be considered and, in the end, the "pure" types are rare. In this sense, Boggs' classification, even though useful, is nevertheless difficult to manage.

Genetic classification, due to Hartshorne and dating from 1936, seeks to disengage relationship between frontier and human occupation. The principle is to know if the frontier was established before, during or after the population set up the main elements of the inhabited landscape (De Blij, 1973). This principle allows the disengagement of previous frontiers: the American-Canadian frontier; subsequent frontiers, the case with most of the European frontiers; and superimposed frontiers, those of Israel, for example. The lines of truce or armistice often belong to the superimposed type, while previous and subsequent frontiers are characteristics respectively of "young" regions and "old" regions in the sense of their population.

These classifications are not supplementary. On the contrary, they are complementary, and it would even be possible to combine them, to cross them in some way. They could provide a geo-historic means of expressing the phenomenon of the frontier. Even so, all in all, these classifications are antiquated and no longer significantly respond to a modern conception of the frontier that is needed today by some human sciences.

Under present conditions, we must try to develop typologies that take into account relationships that might be created across frontiers. We refer the reader to our work on this subject (Guichonnet, Raffestin, 1974, pp. 61-63). For reasons that are easily understandable, frontiers should remain stable or undergo only slight adjustments. But the non-modification of the support of the signifying does not imply the non-modification of the signified; the frontier, as we have seen, is an instrument, a semic element; the conception we have of it may and must change if it is to adapt to the new entire problem of frontier regions and their articulation must be made explicit. One thing is certain: there is no frontier that

Elements for a Theory of the Frontier

is good or bad in itself. There are only symmetrical or asymmetrical relationships between the collectivities that use the frontier well or badly for various ends. This leads us to a final point: that of power and the frontier.

POWER, LIMIT AND FRONTIER

We have seen that the systems of limits and frontiers, whether they are actualized or not, horizontal or vertical, are invariably necessary. Limits and frontiers take many different forms, delimit fabrics of dimension that are equally variable but none the less always present, whether between States or within them. The territorial network is one of the numerous manifestations of power. Territorial delimitation indicates on the one hand the power that determined its scope and on the other the intentions of this same power: "... the finality of delimitations is not scientific; it is to permit the control of people; what matters is to choose a good dimension—this depends on what is desired to obtain from the inhabitants. It is smaller when power is demanding, but it expands when the action of the master touches only a small sector of each life..." (Claval, 1978, p. 135).

In a less reductivist way, it is permissible to say that delimitations trace the territorial framework of a social project, *sensu lato*, and that they contribute in that very way to the elaboration of an ideology. The consciousness we have of the frontier participates in a national ideology defined as a project: "As long as a national ideology survives, the design of a frontier is justified, even if it proves difficult. Every people aspires to independence, because it is the only way it has of endowing itself with a complete social structure and distributing its members on the totality of the scale of statutes and privileges" (Claval, 1978, p. 135).

If the power changes, if the ideology is modified, then all or part of the system of boundaries is in crisis and risks losing its structure. This is what happened in France with the Revolution of 1789 and in Russia with the Revolution of 1917.

Power needs borders and frontiers in order to control, organize,

enlarge, facilitate, but also to supervise, enclose and if necessary repress.

This is why it is important to be very attentive to any restructuration of the systems of borders and frontiers, because no change is ever innocuous; it always ends by influencing the existence itself of men through their territoriality as they daily experience it.

AN OUTLINE FOR A LIMOLOGICAL THEORY

The border (or frontier) is a structural invariant, if not morphological, whose construction is conditioned by the interface of physio-, eco- and socio-logics. This interface constituting an island of neguentropy produces through its very existence a system of limits with regard to exteriority. This system of limits fills four essential functions: *interpretation, regulation, differentiation and relation*. These are the mega-functions we must attempt to clarify and illustrate.

The boundary is the translation of an intention, a will, an exercised power, a mobilization, etc. The boundary is first of all a tracing-out, an indication, and later on sign and even signal. We have said that every living being emanates one or more limits: to exist is to construct and produce limits and thus even define a territory beginning with a portion of space. Limit as a traced line reveals the reach of an activity, the reach of a force: on the near side of this line there is coherence and organization; on the far side there is dissolution and weakening. Any network is commanded by a system of factors that balance and compensate each other, and nothing prohibits considering a mathematical theory of the frontier even if it is yet only a utopian dream. In a way, the frontier or boundary defines an intermediate state between actualization and potentialization. To think in this way, like Lupasco, is to treat a limit in energetic terms (Lupasco, 1971, pp. 70-71), since a boundary as a traced line is the translation of a force, of a work. But when we say work we also say information. At a certain level in the production of a boundary, beyond trace and indication, there is a sign that reveals an energetic stabilization and also the emergence of an information. At this stage of translation, the

Elements for a Theory of the Frontier

signal, information *par excellence*, has more weight. The inscription on the monument to the dead of Cavour (Piedmont in Italy) is the very expression of the frontier as a signal: "To reclaim the sacred limits that nature has placed as the frontier of the homeland, they fearlessly faced a glorious death." Thus the boundary knows a process that leads from energy to information. When that process has reached its end and is somehow crystallized, the frontier becomes reference and instrument of territorial taxonomy. The frontier has been widely used in the political vocabulary to mobilize peoples and nations. Along with the capital city, the frontier is perhaps one of the last refuges of an ancient sacralization in our societies. This sacred character is in any case the timeless liaison between the furrow of Romulus and the contemporary national frontier. The boundary is always ideological to the degree in which it is the translation of a socio-political project. The frontier between the East and the West comes from this ritual sacralization that installs two worlds by opposing them but at the same time regulates them, differentiates them and links them.

The boundary is a regulation because it delimits not only territories but also "reservoirs" that is, pockets of time. A territory is an ensemble of "resources" at the disposition of the group that sets its limits. The boundary is at the same time a political, economic, social and cultural regulation: it marks off the areas relative to the interior where experiences and knowledge, instruments and codes, are in accord with collective projects. To erase or seal a boundary is to put a complex order in question: it is to cause a crisis that will only be overcome by a new sacrifice giving rise to new boundaries. The boundary is also a regulation in the sense that it indicates an area of autonomy for the ones who established it. The boundary is a regulation of what it interprets: a will or a power. The boundary is a regulation because it aims at homeostasis, a homeostasis of the interface that was discussed above. As a necessary invariant, a boundary or a frontier could not be eliminated as some partisans of economic integration in politics would like. They make a serious mistake: they confuse the structural necessity of the boundary and the contingency of historical roles credited to the boundary. By regulating, a boundary articulates, joins and/or disjoins. It acts as a switch that is turned

on or off, permits or forbids. It is not in itself either negative or positive: it is one or the other within a context, and it would be erroneous to question its necessity through reference to a particular situation.

A boundary is differentiation. It is always the basis for a difference whose disappearance is a crisis. If throughout history the crossings of a boundary line have almost always been accompanied by explosions of violence, it is just because the indispensable difference was on those occasions negated. To reestablish a boundary is to find again the sense of differentiation and restore order. No material or spiritual activity can do without a system of limits. This necessary differentiation does not imply that limits are always stable, but it does imply that there are always limits, which we will admit is a different matter. Chaos is lack of differentiation: it is the absence of limits. We can easily see the rapport between boundary and values. The boundary is ubiquitous; it is an absolutely indispensable invariant. We could say, and here we would be in agreement with those who extol the elimination of frontiers, that boundaries are not important—provided they exist. We see that the differentiation brought about by boundaries opens up on a theory of culture. In the end, any culture, in the anthropological sense of the word, is a theory acting within limits.

Finally, a limit is a relationship through the proximity it postulates. It juxtaposes different territories and durations, it allows them to confront each other, to compare, to discover each other through the societies they have developed. The relationship may be of exchange, of collaboration or of opposition; the nature of the boundary itself will reflect and be conditioned by it.

Translation, regulation, differentiation and relationships are the principles that will always be found in a boundary or frontier: Principles that must permit essential questions on any boundary with regard to which we must ask: what does it translate, what does it regulate, what does it differentiate, what does it link? It is the only way to pass from an idiographic analysis to a nomothetic analysis, the only way to go beyond the particular to reach the general.

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