

between thinking and being is comparable to that which Spinoza brings into play around the notion of power. Spinozan substance, defined by an infinity of attributes (of which only two, extension and thought, are accessible to our understanding), has two powers: a power of existing and acting (defined by the infinity of its attributes) and a power of thinking everything that it brings into existence (which the attribute that is thought, profiting in this perspective from a privilege of redoubling, succeeds in filling—there are ideas of ideas). Being and thinking in Spinoza are two powers of substance, much as they are two “sides” of individuation in Simondon.⁵

With the notion of transduction, Simondon thus displaces the traditional line of inquiry: for the problem of the possibility of knowledge, he substitutes that of individuation of knowledge. Now, he tells us, it is a matter of an analogical operation: “Individuation between the real exterior and the subject is grasped by the subject due to the analogical individuation of knowledge in the subject” (*IG*, 34; *IL*, 36). It follows that what now guarantees the legitimacy of the method, that is, the adequacy of the description to reality, is the analogical and self-grounded dimension of the procedure of thought. It is thus crucial to understand what this procedure consists in.

Analogy

At stake for Simondon is showing that individuation is primarily an operation, and placing knowledge of the operations of individuation at the heart of a new way of thinking about being and a new method of thought. Only an analogical method turns out to be adequate to ontogenesis, however. The founding act of this method, the analogical act, is defined as a “putting into relation of two operations” in one of the supplements to *L’individu et sa genèse physico-biologique* included in the new edition of the work (261–268; *IL*, 559–566). In the *Sophist*, Plato describes the analogical act as an act of thought that consists in “transporting an operation of thought [that has been] learned and tested with a particular known structure (for instance, the one that serves to define the fisherman in the *Sophist*) onto another particular structure [that is] unknown and the object of inquiry (the structure of the *Sophist* in the *Sophist*)” (*IG*, 264; *IL*, 562). Plato’s discussion already makes clear that the transfer of operations is not grounded in an ontological terrain common to the two domains, in a relation of identity between the sophist and the fisherman, but rather establishes an “identity of operative relations.” Whatever the difference between terms (on one side the sophist, on the other the fisherman), the operations (of productive seduction/capture) are the same.

Nonetheless, because it operates in an ontogenetic perspective, Simondon's reworking of Platonic analogy demands a rigorous definition. In effect, if transfer is only a transfer to one being of the manner in which we think about another being, analogy remains an "association of ideas." And it is not unlikely that, at the time he was pursuing this inquiry into individuation, Simondon had in mind some infelicitous examples of recourse to analogy. In particular, in his view, the greatest weakness of the then emerging science of cybernetics was undoubtedly that it functionally identified living beings with automatons (see *IG*, 26; *IL*, 28). Nonetheless, less than ten years after the birth of that science, Simondon paid homage to it in *Du mode d'existence des objets techniques*, as the first attempt at a "study of the intermediary domain between the specialized sciences" (MEOT, 49). And in fact, basing its procedure on the study of automatons, cybernetics proposed an entire series of analogies between automated systems and other systems (essentially: nervous, living, and social), in order to study them from the point of view of the "controlled acts" of which they were capable as systems. Yet, reading Simondon's definition of analogy, we understand precisely why he could not but think of cybernetics in terms of an imprecise use of analogy, which from the outset exposed it to the danger of reductionism: in effect, bringing together the logical structure of functioning of systems independently of the study of their concrete individuation leads purely and simply to identifying the systems studied—living, social, and so on—with automatons, capable only of adaptive behavior.

In such a context, the development of a rigorous understanding of analogy appears as a response to a crisis, as a matter of fending off a diluted conception of analogy, which would deprive it of its richness. This is why Simondon specifies that the analogical method, which posits the autonomy of operations in relation to their terms, is valid only insofar as it sticks to an ontological postulate stipulating that structures must be known by the operations that energize them and not the inverse. It only has epistemological value if "the transfer of a logical operation is the transfer of an operation that reproduces the operative schema of the being known" (*IG*, 264–265; *IL*, 562–563).

Analogical knowledge thus establishes a relation between the operations of individuals existing outside thought and the operations of thought itself. The analogy between two beings, from the point of view of their operations, supposes an analogy between the operations of each being that is known and the operations of thought. Thus the rigorously analogical dimension of the method accounts for the parallelism mentioned previously. We may speak of a *coindividuation* of thinking and the beings thus known, whereby

the method gains an immanent legitimacy: "The possibility of employing an analogical transduction to *think* a domain of reality indicates that this domain is effectively the seat of a transductive structuration" (*IG*, 31; *IL*, 33, emphasis mine). Here, the possibility of thinking is not capable of any excess over the real, which immediately restores the movement of being. As he pushes his inquiry into the limits of reason as far as possible, Simondon shows signs of complete confidence in the power of thought. And yet, we could not possibly be farther from the Hegelian postulate wherein only the rational is effective within being. If it began with such a postulate, analogical knowledge would not be able to grasp the "real" operations in which structures are constituted, but would stop at the apprehension of relations that are only conceptual. If we apprehend the movement of being on the basis of the identity of the rational and the real, we grasp a movement that is "only" that of spirit. Rather than pursuing the parallel operations of individuation of beings and of thought as in the theory of individuation, we will perceive only one individuation, that of Spirit, sweeping everything else along under the rubric of provisional moments. This is essentially the criticism that Simondon levels at the Hegelian dialectic: the dialectic sees only moments, whereas it is a matter of discerning phases; it makes the negative the logical motor of being; it is incapable of perceiving the richness of the preindividual tension between physical potentials that are incompatible without being opposed. Thus, where for Hegel it is on the side of thought that the identity of thinking and being is effectuated, in Simondon's philosophy such an identity rests on the transductive ground of being, which is the ground from which thought proceeds.

Nonetheless, something seems to cast doubt on the immanence of the method of thought required by the theory of individuation. It is the strange impression of dealing with analogy by "squaring."⁶ In effect, analogy's power of discovery in the order of thought is itself conceived by analogy with the operation of crystallization in the domain of physical individuation: "from the microscopic crystalline seed, one can produce a monocrystal of several cubic decimeters. Doesn't the activity of thinking harbor a comparable process, *mutatis mutandi*?" (*IPC*, 62; *IL*, 549). In her contribution to the conference devoted to Simondon in April 1992, Anne Fagot-Largeault concludes from this passage that the "fecundity of this analogical procedure of thinking is itself explained by a physical analogy."⁷ And yet, this circle of the physical and noetic is far from being a vicious one. Surely we need to recognize in it the sign of the transductive method that Simondon is putting to work, because, just as we must not look outside a domain for the structures of resolution that operate within the domain,

we cannot claim to study individuation *in general*. We are always dealing only with singular *cases* of individuation, which complicates the task of a global theory of individuation. Simondon solves this difficulty by constituting a paradigm.

The Physical Paradigm

We can never place enough emphasis on the singular nature of the relation between thinking and being established by the philosophy of individuation. Thus it is not only being that must be known from the operations that energize it. Thought itself proceeds by operations that establish new relations in the order of ideas, to the point where “the primitive notional choice is invested with a self-justifying value; it is defined by the operation that constitutes it more than by the reality it objectively aims for” (*IG*, 256; *IL*, 554). As we have seen, the study of individuation requires thinking that is neither inductive nor deductive but only transductive; thought does not seek its norm anywhere else but within the field of reality initially chosen as the field of investigation. This is why the second gesture of the analogical method turns out to be *constructive*. Thought is constructed from an initial domain providing it with norms of validity and conferring upon it an evident historicity. According to Simondon, “all thought, precisely to the extent that it is real, . . . involves a historical aspect in its genesis. Real thought is *self-justifying* but not justified before being structured” (*IG*, 82; *IL*, 84). Like all *real* being, like any fragment of the real that is individuated, thought is rooted in a milieu, which constitutes its historical dimension; thoughts are not ahistorical, not stars in the heaven of ideas. They emerge from a theoretical environment, drawing the seeds of their development from it; but of course, not everything is a seed for thought, and all thought entails operative selection within the theoretical milieu of the era in which it is immersed. Taking on structure through its selective inscription in an era, thought gradually resolves its problems, and in resolving them, justifies itself.

In this way, in its faithfulness to the progression from simple to complex that characterizes the constructive method, the line of inquiry bearing on the individuation of beings will turn to the domain where this question was first posed: the physical domain, which is the “first domain in which an operation of individuation can exist” (*IG*, 231; *IL*, 319). This is why the study of the constitution of physical beings is deemed paradigmatic. But is it really the *study* of physical beings—that is, the knowledge that the physical sciences provide us—that is taken as the paradigm for the study of

individuation, or is it the physical individuals themselves, their process of constitution? Simondon's formulations fluctuate between the two possibilities, now evoking crystallization (and not crystallography) as the instance of a "physical paradigm" apt to clarify the notion of metastability (*IG*, 24; *IL*, 26), while insisting elsewhere on the attempt to "draw a paradigm from the physical sciences" (*IG*, 231; *IL*, 319). Such indiscernibility between epistemological and ontological levels, evident in the formulations the author chooses to explain his choice of physical paradigm, does not stem from a lack of rigor. Rather, it ensues from choosing the process of constitution of the physical individual (and among all the physical individuals, crystals, and particles) for the paradigm of individuation, which necessarily means relying on existing descriptions of exemplary individuations. This is why the study of individuation, taking the operation constituting the physical individual for its paradigmatic operation, claims to "draw its paradigm from the physical sciences," whose criteria for validity have already been constituted "through the progress of a constructive experience" (*IG*, 257; *IL*, 555). Indeed, physics has for some time shown its "capacity for progressively transforming theory into hypotheses and then into almost directly tangible realities" (*IG*, 256; *IL*, 554), that is, a capacity for constituting the concrete from the abstract, for producing a concrete on which one may act.⁸

But what precisely will the philosophy of individuation borrow from physics? Within the initial domain constituted by physical science—and especially within the continuist and discontinuist theories that Simondon strives to prove compatible—it is a matter of pinpointing the "epistemological role" played by the notion of the individual, as well as the "phenomenological contents" to which it refers.⁹ Then, on the strength of results from this initial research, it is a matter of attempting to transfer them "to domains [coming] logically and ontologically after" (*IG*, 257; *IL*, 555). They come logically after, because the constructive method proceeds from simple to complex; they come ontologically after, because the passages from physical to biological, and from physiological to psychic, correspond to successive dephasings of being. But, even though we can draw a paradigm from the physical sciences that to some extent constitutes a guiding schema for the study of individuation, this does not mean that we may claim "to operate a reduction of the vital to the physical" when transposing the physical paradigm into the domain of the living. The theory of individuation takes into account differences between the diverse levels of individuation, and "the transposition of the schema is in turn accompanied by a composition of it" (*IG*, 231; *IL*, 319). Under these conditions, by means

of this transfer from one domain to another, the philosophy of individuation itself is constructed, because it allows us to “pass from physical individuation to organic individuation, from organic individuation to psychic individuation, and from psychic individuation to subjective and objective transindividual, which defines the layout of this research” (IG, 31; IL, 33). We pass from one domain of being to another by the transfer of operations from one structure to another, while adding to each level the specificities that the physical paradigm, because too simple, does not allow us to grasp. *Nonetheless, the physical paradigm remains in its capacity as elementary paradigm*; and, as Gilbert Hottois aptly stresses,¹⁰ the original analogy of the physical individuation of the crystal persists throughout the description of collective individuation, wherein Simondon defines the group as a “syn-crystallization of many individual beings” (IPC, 183; IL, 298).

The Allagmatic

“Allagmatic” is the title of the final supplemental section of *L’individu et sa genèse physico-biologique* (IG, 261–268; IL, 559–566), added at the time of its republication. Operation, transduction, analogy, and constructivism are among the notions subsumed under this enigmatic term. The allagmatic is first defined as “the theory of operations” (IG, 261; IL, 559), complementary to the theory of structures elaborated in the sciences. In other words, it would appear to be a matter of the “operational side of scientific theory” (IG, 263; IL, 561). But what is an operation? Simondon’s answer is clear: “An operation is conversion of a structure into another structure” (ibid.). It follows, then, that we cannot define an operation *outside* a structure; and so, defining the operation “comes back to defining a certain convertibility of operation into structure and of structure into operation” (ibid.). One might symbolize this relation between operation and structure, constitutive of the notion of operation, much as Marx symbolizes the nature of the capitalist relation between commodity and money in exchange.¹¹ The process through which one sells a commodity to buy another can be written in the form: C-M-C (where C stands for *commodity*, and M for *money*). It consists of two opposed acts: sale (C-M) and purchase (M-C), two half-chains of a single act, since “the transformation of the commodity into money is at the same time a transformation of money into commodity.”¹² But Marx shows that the form C-M-C (selling to buy) has as its corollary the form M-C-M (buying to sell), which is fundamentally different because it describes the becoming-capital of money. In this second form, in effect, commodity and money “function only as different modes of existence of value itself.”¹³ The

transformation of the form C-M-C into the form M-C-M thus expresses the passage from traditional exchange to capitalist exchange, in which money and commodity are two faces of capital that enter into the process of value.

In any case, for the moment, let us look at the first definition, cited above, that Simondon proposes for the operation (O) as conversion of a structure (S) into another structure: that definition can be written in the form S-O-S, entailing a contraction of the half-chain S-O (conversion of a first structure into operation) and of the half-chain O-S (conversion of the operation into the next structure). Such a formulation shows that the allagmatic is concerned with modulation, that is, with the putting into relation of an operation and a structure. Yet, a few lines later, Simondon proposes the second definition already cited, in which the operation entails convertibility of the operation into structure and the structure into operation; we now see that this second definition constitutes a variation on the first, and may be written in the form O-S-O, wherein the focus is now on the passage from one operation to another by way of a structure.

It now becomes possible to define the allagmatic more precisely than Simondon's initial definition of it as a theory of operations. At the levels of being and thought, the allagmatic involves a double becoming, ontological (or rather ontogenetic) and epistemological: on the one hand, it is a matter of the allagmatic "determining the true relation between structure and operation within *being*"; but, on the other hand, it falls to the allagmatic "to organize the rigorous and valid relation between structural knowledge and operative knowledge of a being, between *analytical science* and *analogical science*" (IG, 267; IL, 565). Evidently, the nuance of the term allagmatic cannot be confined to a simple affirmation of the analogical dimension of knowledge, which consists in knowing a structure through its operations. Yet, to the extent that the allagmatic invites us to ask "what is the relation between operation and structure within being?" (IG, 266; IL, 564), it becomes clear that we cannot rely entirely on analytical science, which assumes that a whole is reducible to the sum of its parts, or on analogical science, which assumes a functional holism in which the whole is primordial and expressed through its operation. Allagmatic theory is concerned with grasping the union, within being, of the structure of a being and its holist functioning; this is why it can be defined as "*the study of individual being*" (IG, 267; IL, 565). Apprehended from the point of view of the individuating process whence it emerges, the individual is not a definitive being, finished upon arrival. It is the partial and provisional result of individuation in that it harbors a preindividual reserve within itself that makes it susceptible to plural individuations.

Grasping being “prior to any distinction or opposition between operation and structure,” the allagmatic entails constructing a point of view that comprises the individual as “that in which an operation can be reconverted into structure, and a structure into operation.” This is another way of saying that the allagmatic is concerned with changes of state, or once again, relation. But we must immediately add that relation would no longer be conceived of as something that “springs up between two terms that are already individuated”: in effect, within the theory of individuation, relation is redefined as “an aspect of the internal resonance of a system of individuation” (*IG*, 27; *IL*, 29). In this respect, it has a “rank of being” and cannot be considered as an entirely logical reality.

The Reality of the Relative

From Knowing the Relation to Knowing as Relation

“The method consists in trying not to piece together the essence of a reality by means of a conceptual relation between two final terms, and in considering any true relation as having a rank of being” (*IG*, 30; *IL*, 32). It is in such terms, precisely on the basis of a methodological concern, that Simondon chooses to present the postulate of the reality of relation, but only insofar as this postulate *sums up* the method on its own (“The method consists in . . .”). Insofar as this simple statement of method is simultaneously an ontological statement, a thesis on being—as is always the case with Simondon, as we have rather insistently noted—it can be read as a declaration of war against the substantialist tradition, to which we owe the persistent misunderstanding of relation, conceived as a simple relation between terms that preexist the act of putting them into relation. “It is because terms are conceived as substances that relation is a relationship between terms, and being is separated into terms because it is conceived as substance, primitively, prior to any examination of individuation” (*ibid.*). Inverting this traditional point of view, the study of individuation makes substance into “an extreme instance of relation, that of the inconsistency of relation” (*IG*, 233; *IL*, 321). A substance appears when a term absorbs into itself the relation that gave rise to it, thus obscuring it. As long as being is understood substantially, relation appears as nothing but a mental connection between a substance and attributes or qualities conceivable outside it. The substantialist approach is thus incapable of apprehending a being, for instance, a sulfur crystal, other than by conceptually adding predicates, such as the color yellow, opacity, transparency, and so on, to the idea of crystalline matter. Yet Simondon shows that the characteristics of individuation that