

# Psychoanalysis and Catastrophe Theory

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2021-2023

## *Introduction*

Soon twenty years will have passed since the death of René Thom (1923-2002), not much in terms of the history of ideas, but enough to be able to evaluate today, without any fashionable issues, what is the scope of catastrophe theory in psychoanalysis? We shall understand this word “scope” in a double sense: scope by extension - does the theory of catastrophes present a possible extension in psychoanalysis in its clinical dimension as well as in its theoretical dimension - but also scope in the sense of support. To what extent could the theory of catastrophes support a new impulse of psychoanalysis?

## *The theory of catastrophe*

In the theory of catastrophes, any domain that we wish to study is assimilated to a dynamic system whose exact nature is unknown but that we can observe in its phenomenological manifestations (its apparent states). We consider this system as likely to take a certain number of stable states generated by an unknown internal dynamics. These states are described in a set of descriptive variables of the system (state variables in the space of phases taken by the system). By controlling the values of other variables, called “control parameters” or “control factors”, which vary in another space (external

space), the apparent states of this system are modified. Variations on the control parameters trigger changes in the system’s states. This minimal formulation is applicable to all kinds of systems, whether they are physical, biological or psychological, provided that they are subject to a gradient dynamic tending towards energy minima and that the variables are correctly identified.

Although the pleasure principle reigning in the unconscious can be assimilated to an energetic gradient oriented towards its minimum, it is difficult, in psychoanalysis, to define the system on which the catastrophic model would apply. Is the system the whole psyche, instances included? Is it the unconscious? Is it the ego, organized instance, of which the superego would be the space of control, and the defenses its regulations? Is the system circumscribed to the development of the libido, with its phases, its integrations and regressions, its fixations, its sublimations? And if we arbitrarily choose to pose the system as one or the other of these alternatives, what is the theoretical gain of such a construction? Don’t we risk obtaining in output what we have inserted in input?

## *Difficulty of application in psychoanalysis*

The direct application of the “catastrophic” method to the psychic functioning risks more-

over to objectify the psyche of the patient. In psychoanalysis, we are not in a situation of observation of an external system (for example, the psychic complexity of the patient with its internal drives and the superego as a control space) but in a situation of intersubjectivity. The system considered should therefore be the couple associating the psychoanalyst (his psychic flow of thoughts and affects, his mental states, his counter-transference) and his patient (his psychic flow of thoughts and affects, his mental states, his transference). But then, it becomes difficult to define the control space, the number of factors, the number of state dimensions, and the topological type of the bifurcation set. A search for catastrophic modeling would thus be an intellectual construction not only without concrete interest, but moreover heterogeneous to the technique of psychoanalysis. The latter imposes the release of preconceptions and must leave room for the unknown. In spite of these reservations, certain contributions of the theory of catastrophes seem to us to be interesting elements for psychoanalysis. We will distinguish three of them. The first is centered on the technique of conducting a treatment, the second on the understanding of the relationship between the unconscious and writing, and the third on the structural dynamics of identifications.

#### *Attention to critical moments in the treatment*

In the course of the session, we encounter, through the patient's discourse, apparent states of the self, in particular emotional states. These can be stable but they also encounter instabilities that denote the existence of an internal dynamic. This dynamics is not intelligible by reactions to the environmental modifications of the patient's life, nor to the hazards of the concrete existence (they are only on the surface) but it is under the influence of internal factors of the

psychological life. At the time, this dynamic is unknown both to the psychoanalyst and to the subject himself. It can only be apprehended afterwards. For example, in front of the sudden appearance of an anxious feeling whose intensity is out of any proportion with a real event, we will infer the existence of an internal dynamics of repression by the self of unconscious desires or reactivated traumatic motions. By translating this dynamic in terms of the theory of the catastrophes, the precipitation of a symptom or a substitutive formation results from the crossing of a stratum of a space of three-dimensional bifurcation, since it obeys the interactions between at least four dimensions, the two organized instances of the ego and the superego, the requirements of the id and those of the reality (social, family, cultural, economic). This space of complex bifurcation, not representable, allows to conceive – virtually – the appearance and the disappearance of psychological manifestations. This is only a metaphor, of course, but it is a technically operative metaphor. Thus, the catastrophic notion of bifurcations is associated with the notion of critical zones. As close as possible to the catastrophic singularity, there is a reactive sensitivity that can induce a bifurcation. One could then imagine the art of analytic interpretation as being that of detecting these critical zones, perhaps by intimate resonance between the mental attractors of the analyst and those of his patient. An intervention, given with tact, sometimes a simple comment, a punctuation, can exert a psychic action of great intensity and induce a progress in the treatment. The theory of catastrophes, used metaphorically, thus gives consistency to the therapeutic intuition: the proximity of a critical zone in the patient implies its detection by the analyst. It also involves the risk of an interpretation that will allow a bifurcation of meaning, a qualitative change in self-knowledge, in other words, an insight.

*Repression and form*

René Thom teaches us to detect under any representation the existence of an agent scheme resulting from a dynamic of conflict. The pictogrammatic and ideogrammatic writings (archaic sinograms) thus reveal an obvious analogy with the schemes of elementary catastrophes. But the fundamental syntactic structures of verbal language are also direct expressions of elementary catastrophes. The nuclear sentence can be considered as a drama (Lucien Tesnière) between protagonists assimilated to attractors in competition. This catastrophic conception is illustrated magnificently by the semiotics of the gestural languages whose space of realization is quadri-dimensional (3 dimensions of the gestural space plus the time) thus avoiding the dimensional collapse inherent to the linearity of the oral languages where the pluridimensionality must be projected on the sequential chain of the words. The sign languages of the deaf reveal thus in their gestural iconicity the agent schemes of elementary catastrophes. The presence, under all representations of agent schemes, allows a reinterpretation of the use of metaphors (analogies).

If an object *A* has a morphodynamic core topologically identical to that of an object *B*, then *A* and *B* can be substituted in a metaphorical relation. Take the following metaphor, *old age is the evening of life*. The two signifiers “old age” and “evening” share the same morphodynamic pattern of termination that we represent by the following diagram -| which can be read as, something exists – and then ends |. Now this morphodynamic scheme results from a fold catastrophe whose bifurcation space is a single point. Since these two signifiers possess a common scheme, any analogy is true in the sense that it reveals a similar dynamic link. This is what allowed Thom to say to Lacan, during a

lunch where the psychoanalyst had invited him: what borders on truth is not error but insignificance, i.e. the absence of meaning. The formulation is provocative, but it is fundamental in the epistemology of catastrophe theory. By elevating analogies and metaphors to the rank of vectors of investigation of meaning, one generates a virtual space in which one can study the potential deployment of observed phenomena. Of course, the investigation of the patterns common to two objects does not mean that they are identical - we would then be in a delusional thinking - but these objects share a common dynamic genesis. The phenomena of convergence in biology, the identical forms of oil drops in water and the forms of jellyfish, constitute illustrations of these analogies, false as regards determinism by the substrate, true for catastrophic determinism indifferent to its nature.

The existence of an agent scheme existing under any mental representation, then, becomes a useful notion for understanding the symbolic equations realized by the unconscious. For example, the unconscious symbolically assimilates a penis to an object of oblong shape with an unfolding end, a vulva to an excavation, breasts to the contours of a hill, etc. The repression - defense of the ego - seeks the compromise between the unconscious requirements of the satisfaction of the sexual drive coming from the id and those of the superego aiming at putting away the disturbing sexual representations. It is thus a search for compromise requiring the coexistence of contradictory elements. The application of the theory of catastrophes to the nature of the representation provides particularly interesting elements to conceive how this compromise can be carried out. The ego, repressing the disturbing representation, under the injunction of the superego, tolerates its dynamic “skeleton” because the sexual semes are displaced but the id finds satisfaction by the representation of the sexual drive

through morphodynamic features (penetration, excision).

It is thus common experience during an analysis to encounter in the dreams and fantasies of the patient, the evocation of strange forms, incomprehensible to him. These can be kinds of locks, pins, forks, and holes. The interpretation in terms of disguised sexual representations, formations of compromise, does not have to be questioned - the sexual is indeed consubstantial to the unconscious - nor their function of enigmatic signifiers as proposed by Jean Laplanche or of original pictograms for Piera Aulagnier. But it is insufficient if it does not integrate the dynamic processes that allowed their genesis. Catastrophe theory can thus shed new light on these phenomena that can be observed in clinics where the unconscious seems to have become a scribe. The Freudian metaphor of the unconscious as a “*Wunderblock*”, a magic slate, allowing all psychic palimpsests, is singularly congruent with the knowledge of the agent graphs of catastrophes. The relevance of the concept of an unconscious structured like a writing (Jacques Derrida, Piera Aulagnier), full of indexical traces of complex dynamics, can thus only be reinforced by the contributions of the theory of catastrophes. On a technical level, this knowledge allows the analyst to infer a potential meaning on enigmatic objects invested by the patient and whose choice can be enlightened by the identification of its traces (points and forks, curves and splinters). On a speculative level, in the line of René Thom’s models, one could conjecture that the whole of the development of the libido follows the unfolding of a multidimensional aggregative catastrophe of which the stages (oral, anal and phallic) would only be local sections and of which one would have knowledge by their indexical traces, and precisely by the inscriptions of their agent schemes in the analytic material. To conceive the development of the libido as a

generalized catastrophe, with local sections corresponding to the partial drives, is also a powerful metaphor that evokes the grandiose construction of Sandor Ferenczi where in his *Thalassa* he conceives the sexual coitus, “*amphimixie*” of the drives, as the recapitulation of the phylogenetic catastrophes that have marked the evolutionary history of Man. In the genitality are expressed not only the traces memories of the ontogenetic catastrophe (birth), but also those of the phylogenetic catastrophes, which reach an abreaction afterwards. Thus, for Ferenczi, what we call heredity is only the transfer to the descendants of the greater part of the painful task of coping the traumas.

#### *Identifications as structural effects*

The second contribution concerns the phenomenon of identification. In analysis, the patient is caught up in the conflictual play of unconscious identifications, constructed since childhood, being made and unmade, sometimes being brutally metamorphosed, without the determinations of these conflicts being entirely intelligible by the internal history of a life. The identifications result from the meeting between the subject and structural determinations (family structure, kinship structure and anthropological structure), local determinations (place in the siblings, sex) and eventual determinations (position in a genealogical history, death, diseases and accidents). The complex conjunction of these determinations hinders any prediction and often any understanding of the causes. But it can be enlightened by the catastrophic interpretation of the genesis of the structures. If we consider that an identification is an effect of structure, in the sense of structuralism where the position in a structure takes precedence over the identity, then the theory of catastrophes brings us a gain of intelligibility. In the so-called

“agent” interpretation of catastrophes, we consider the existence of apparent states, which we note here A1 and A2, not in substance as being forms but as virtual positions that can be occupied by agent in a considered system. These positions virtualize each other and are thus identified with positions in a differential structure. The theory of catastrophes becomes a metatheory of structuralism, as shown by the work of Jean Petitot. For example, it is applicable to narrative structures. By interpreting the cusp of the catastrophe of the frontier in the lexicon of linguistics, it becomes an ideal syntactic event informing an elementary narrative structure and distributing places (minima) invested by identity agents (A1 and A2). At the beginning, there is a single place invested by an agent A1. At the crossing of the first stratum of the cusp, another agent A2 appears, whose influence grows until it comes into conflict with A1. After the crossing of the conflict stratum, A1’s influence decreases until it is captured by A2, who remains the only surviving agent. This interpretation models the phenomena of appearance and disappearance of characters and objects in tales, in myths, and more generally in any narrative. The narrative realizes a trajectory on a surface stretched between competing attractors and strewn with catastrophes, thus constituting narrative germs that constitute the poles of Greimas semiotic square.

The theory of catastrophes has also been used in the interpretation of the canonical formula of myths proposed by Lévi-Strauss. This universal formula makes it possible to account for an incomprehensible link between two elements of a myth. This link, for example the identification in an Indian myth between pottery and jealousy, is not deducible from the perceptive experience, and requires a hidden process of attribution of link (transcendental deduction) between these two elements. The internal, hidden pro-

cess attributes an inverse function (a negative property) to an empirically observable property. But no myth can be explained by an internal semiotic determinism, limited to the interpretation of its content. The determinism of myth I implies the effect of a myth II, absent, possibly unknown, belonging to another people of the same cultural area, which contains actants and functions, which will be integrated in an inverted form into myth I. Why in an inverted form? Because the human mind, fundamentally, builds systems of differences. There can be no symbolic closure by neutralizing differential relations. It is necessary to maintain a circulation of difference so that mythical thought can continue to operate its function. The catastrophic interpretation of the canonical formula, proposed by Jean Petitot, then taken up again, commented on and enriched by Lucien Scubla, allows us to conceive of the existence of catastrophes (dual butterflies) underlying the structure of myths, allowing us to represent (but not to explain) the appearance, disappearance and metamorphosis of the actants, and thus the maintenance of the differential structure. Now, we know since the first works of Lacan, that the identifications between the terms present in the myths are close to those observed in psychoanalysis. The unconscious oedipal identifications, their conflicts, their modifications, which have been described on the structural level, can gain an additional intelligibility by considering them as determined by a catastrophic underpinning. This extra intelligibility consists, for the psychoanalyst, and ideally for the patient, in accepting the fact that the identifications of the subject - correlative of the drama of human existence - are overdetermined by deep, transhistorical dynamics, on which operates the necessity of the symbolic variation, and on which the self, “rider with the untamed mount” to take back the expression of Freud, does not have any means of

action, if it is not the half-opened possibility of a fleeting intuition of their powers.

### Conclusions

These three examples do not circumscribe the potential contributions of catastrophe theory to psychoanalysis. Other approaches are possible and have been the subject of other works. A comparative analysis of Freud's Lamarckism and Thom's theoretical biology could be very instructive. Lamarckism, to which Freud was so attached, in spite of the pressing objections of Ernest Jones, consists in accepting the repetition on the scale of an individual life of the events (in this case, the murder of the archaic father inducing guilt and the foundations of the social) which took place on the phylogenetic scale. This myth is invalidated by all contemporary scientific data, but the idea of a transmission of acquired experiences (in a catastrophic form) could take on a new consistency within a conception where the genome is a set of controls acting on a delocalized multidimensional dynamic. The property of internalization of external factors is also strongly suggestive for understanding the constitution of the superego by introjection of parental *imagos*, in other words, in catastrophic language, an external control that has become an internal control by the phenomenon of stabilization of thresholds.

But, in fine, the most consistent contribution of catastrophe theory to psychoanalysis seems to us to be of an epistemological nature. René Thom's invitation to construct a virtual space in which, by immersing a problematic object, we can study its unfolding and trace its generic singularities, must be appreciated as a call to creative thinking. As soon as we wish to take into consideration the extensive globality of psychic life, and for example the construction of mental objects from perception, attention, intentional

processes, as soon as we try to understand the fact established by neuropsychology of the modularity of cognitive operations, to make intelligible the neuronal implementation of mental operations (etc.), - all dimensions also implied in the construction of mental objects - all dimensions also involved in psychopathology - then Freudian metapsychology, despite its genius, as well as its structural interpretation by Lacan, become insufficient. It is always possible to decree that being interested in these questions means leaving psychoanalysis, and being satisfied with a local approach - let everyone stay at home and everything will be fine in the best of worlds! But reality ignores disciplinary partitions, and as soon as the clinician takes a taste of the spirit of adventure, attempts a synthesis, and deploys the virtualities of a theoretical imagination capable of welcoming Freudian sexuality and the unconscious as much as neurobiological and cognitive data, then catastrophe theory, which is fundamentally transdisciplinary, offers him a haven. Within the framework of catastrophic models, a vast and flexible conceptual universe, there is indeed room for elaborations where cognition and unconsciousness can be arranged in constructions, certainly virtual, but effective for thought. It will remain for the researcher to verify that the deployments of his catastrophic inspiration remain coherent and provide a gain of intelligibility on the object of study that he has given himself.

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