“无意味”的符号学研究

Accepting Randomness*

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Abstract: The article first defines three types of randomness: ontological, phenomenological, and epistemological randomness. It then introduces a fourth semiotic definition of randomness, as something that does not arise from intrinsic ontological characteristics, or from the imperfect perceptibility and, therefore, phenomenological unfathomability of a subjacent regularity, or from the unsuitability of the formula that is supposed to grasp and, possibly, control it, but from the way in which a metalanguage is created in order to describe and make sense of irregularity. In keeping with this definition, the article then reconceptualizes Charles S. Peirce's semiosis and introduces the distinction between interpretants and scales of interpretation, and elaborates on the notions of over-complexification, over-simplification, and significance. It concludes that the efforts of scholars of all fields in the future will have to be directed toward the task of understanding the correct scale at which understanding of reality must take place, and social coordination and action as a consequence of it.

* A first version of this paper was presented at the COST－COMPACT (Comparative Analysis of Conspiracy Theories) conference held at the University of Dubrovnik, 18－19 October 2018; I thank the EU program COST and the organizers for such a splendid opportunity.

Keywords: randomness, semiosis, scale of interpretation, oversimplification, overinterpretation

论随机性的接受

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摘　要： 本文首先定义了随机性的三种类型：本体论随机性、现象学随机性以及认识论随机性，进而给出了第四种也即符号学式的定义。随机性不来自内在的本体论特征，也不是因为我们不具备完全的感知力，因此它是底层规则性在现象学意义上的不可测性。它的产生也不是因为它不与那些似乎可以被掌握甚至被控制的准则不相符。随机性是通过制造可以描述以及理解不规则性的元语言而形成的。为了说明上述定义，本文重构皮尔斯符号过程这一概念，区分解释项与解释范围之间的差异，并阐明过度复杂化、过度简化以及意义等概念。本文最后指出，不同领域的学者应当在将来致力于探索一个正确的范围，在这种范围中对实在的理解必然会发生，同时探索对实在的理解作为一种结果所需的社会协调和行动程度。

关键词： 随机性，符号过程，理解范围，过度简化，过度解释

DOI: 10.13760/b.cnki.sam.202001004

ἀνθρώποισι γὰρ
τοῖς πᾶσι κοινόν ἐστι τοὐξαμαρτάνειν:
1025ἐπεὶ δ’ ἁμάρτῃ, κεῖνος οὐκέτ’ ἔστ’ ἀνὴρ
ἄβουλος οὐδ’ ἄνολβος, ὅστις ἐς κακὸν
πεσὼν ἀκῆται μηδ’ ἀκίνητος πέλῃ.

(Sophocles, *Antigone*, V, 1023-27)

Ⅰ. Semiosis on Thin Ice

In one of the episodes that compose *The Decalogue* (see Campan, 1993; Garbowski, 1996; Simonigh, 2000; Badowska & Parmeggiani, 2016; Vaillancourt, 2016; see also Wach, 2000; Haltof, Agusti, and Anton, 2004),

Polish director Kieslowski's[①] masterly cinematic reflection on the Ten Commandments, a scientist lives with his young son near a lake. The lake freezes in winter, allowing people, including children, to skate on it. The young son is impatient: the lake is freezing but it is not certain yet that the ice is thick enough so as to tolerate his weight. The father, therefore, elaborates a complex formula in order to determine the status of the ice. The result is mathematically evident: the son can go to the lake and skate on it with no fear, the ice will hold. The father, however, could not calculate, in his formula, that a random homeless person had camped overnight at the lake, near the place where the son would then go skating. The campfire lit by the homeless, indeed, makes the ice a little thinner. The ice breaks. The son dies. The father desperately stares at his formula.

This episode contains a narrative in which the manifestation of evil is evident. The suffering that a father feels for the death of his son is anthropologically universal. There is no doubt, then, that the movie tells a story of misfortune and the sorrow that it entails. But what is the origin of evil in the episode? Members of the human species, like all other living beings, are destined to perish. Although that is a biological certainty, it is culturally difficult to accept. Entire symbolical systems are created so as to cope with what is, nevertheless, a biological platitude. One of the main elements that make the inexorable chronology of death culturally unacceptable is its indeterminacy. It is not evident when the organism of a human being will perish, also because this datum depends not only on the biological information contained in the organism itself, such as its genetic predisposition to develop cancer, for instance, but also on the uncountable interactions that this biological structure will have with an environment that, in the case of human cultures, is exceedingly complex. It is difficult to accept that, in the environment in which we live our daily life, there is, mostly invisible, a pattern of elements that, in the short, medium, or long term, will interact with the genetic content of our body and ultimately kill us. Some of these elements are

① Krzysztof Kieslowski, Warsaw, Nazi-occupied Poland, 27 June 1941—Warsaw, Poland, 13 March 1996.

known because science has singled them out as direct causes for potential disease and even death. A popular Italian idiom says "bacco, tabacco, e venere riducon l'uomo in cenere"[①], a not-too feminist proverb about how drinking alcohol, smoking tobacco, and womanizing are supposed to shorten a man's life. But what about other factors whose impact on the length and quality of our life is not clear yet, but will nevertheless play a decisive role in introducing suffering, sorrow, and eventually death in our lives.

In the episode narrated in the movie, for instance, what elements should be eliminated or at least curtailed so that evil does not manifest itself in the life of this family by dramatically and prematurely killing a young child, survived by his father? The story told by Kieslowski is a moral apologue about the hubris of science. It is, from a certain point of view, a highly originally and narrative rendering of the Commandment "thou shall not have other gods". The father believes that, through science, and precisely through physics and mathematics, he can control the environment and foresee the future, preventing risks. Risk, indeed, is the possibility that the environment changes in the future in such a way that it will worsen one's conditions of life in it, even to the point of terminating such life. Through calculus, the father turns this possibility into probability. His confidence in scientific knowledge is such that he dares entrusting his own son's life to it: given his weight, the temperature of the air, the weather forecasting, the temperature of the ice, and its current thickness, there will be no risk for the son to skate on it. There would not be any risk, indeed, and the formula with its consequent calculus would be correct, if a totally unexpected element did not intervene to slightly modify the scenario, but to modify it significantly enough as to kill the son.

From an anthropological perspective, it is interesting to analyze what people say when a relative, friend, or acquaintance dies. Besides the common expressions of sorrow, many people will spontaneously produce counterfactual scenarios. In some cases, concocting them will be relatively easy: if he had not developed a passion for skydiving, he would still be alive. In some other circumstances, though, counterfactual scenarios will be more difficult to come

① Literally, "Bacchus, tobacco, and Venus turn a man into ash."

up with. It will not be so straightforward to single out what elements in the environment, life choices, or behavioral patterns should have been eliminated so as to come up with a plausible hypothesis for a longer life.

The tragic aspect of Kieslowski's episode consists in the fact that, when the son died and the father realized that his formula was not correct, the homeless person whose campfire had thinned the ice had already gone. There is no trace of his presence and impact on the environment that the father may fathom. It is only the god-like observation point that the movie grants to its spectators that allows them to infer what has really happened, while the father is left in complete darkness. There is a rational cause for the death of the child. In his case, indeed, the counterfactual narrative could recite as follow: if the homeless person had not existed, or if he had set the campfire elsewhere, the child would still be alive. There is a reason, however, for which Kieslowski chose exactly this element, and not another, to tragically upset the environment whose measures the father's formula calculates. The homeless person is a clear symbolical evocation of what, in life, comes and goes, appears and disappears, manifests itself out of the blue, surprises. It is not simply a structural element of the environment that the formula has neglected to model. It is an evocation of randomness. It is the imponderable, that is, literally, what cannot be calculated.

In the context of Kieslowski's *Decalogue*, and in relation to his poetics, the episode has a religious undertone: science aims at a full grasp of the universe, and arrogantly turns into a technique for the complete mastery over the environment, yet a terrible punishment for this hubris comes from a transcendent dimension, which tragically underlines the condition of ignorance and fragility in which human beings must live and justifies their resort to religion and faith. Given the structural impossibility to control the environment, its risks, and its dangers to human life, the only possibility is to hope, to pray, or, at least, to remain fully aware of the structural limitations of human scientific knowledge.

Ⅱ. Three Kinds of Randomness

Outside this religiously inspired framework, though, the tragic apologue

prompts a reflection on the definition of randomness. Philosophy has long meditated on the nature of what is evoked in various languages as chance, randomness, casualness, and so on. Without delving into this complex philosophical field, and without focusing, for the moment, on the semantic distinctions between different terms and concepts in this area, it is certainly fundamental to distinguish between ontological, phenomenological, and epistemological randomness. (see Svozil, 2018; Giberson, 2016; Church & Hartman, 2019)

Ontological randomness consists in the idea that reality, as it is, including the reality of the environment in which human beings live and die, is characterized by intrinsic irregularity. Apparent pockets of regularity might appear in reality, yet they are an exception and actually an illusion. They are the equivalent of that well-known phenomenon that consists in having the illusory impression of understanding some bits of discourse in a conversation that is uttered in a totally unknown language. Another example of this illusion is pareidolia, for instance, the impression of being able to recognize, in the shape of clouds, some distinctive figures. Belief in ontological randomness usually entails either nihilism or fideism. Given the randomness of reality, humans can either give up any hope of controlling it or developing the idea of a transcendent grasp over it.

In phenomenological randomness, reality is not thought of as irregular *per se*, but as manifesting itself in a way that does not allow one to infer its underpinning systematicness. According to this view, in the episode narrated by Kieslowski, for instance, the final accident is not simply the result of imponderable chaos, but the outcome of a pattern whose regularity and, therefore, controllability is not evident.

The hypothesis of phenomenological randomness is, therefore, strictly related to that of epistemological randomness: a supreme scientist might indeed come up with a formula that takes into considerations not only some physical variables such as the temperature of water in a lake and the weight of a child's body but also some apparently imponderable variables such as the propensity of homeless people to lit up a campfire in some areas of an urban settlement.

Without deepening the question that some variables in the environment might be intrinsically impossible to grasp, mostly because of the interaction between observation and determination, it is evident that, in the movie episode as well as in the history of epistemology, science is in the middle of a tension between ontological and phenomenological conceptions of randomness. The entire scientific endeavor might be described as the ongoing attempt to reduce more and more the domain of the former betting on the existence of the latter.

Ⅲ. Random Networks

This stark contraposition, however, is increasingly nuanced by the awareness that the existence of pockets of regularity within an ocean of randomness might not be casual in itself but depend on a complex dynamic of scales, levels, and emergence. The scientific domain in which this awareness is currently the most developed is probably that of the mathematical theory of networks. (see Battistoni, Caldarelli, and Garas, 2018; Zattoni, Perdon, and Conte, 2020) This theory, which is too complex to be summarized here, in a nutshell shows that, given the presence of two elements, such a sender and a receiver in a phone conversation, it is probable that certain patterns of exchange of information will arise. Applying these same patterns to conversations that happen among three people, however, or, even more macroscopically, applying them to conversations that simultaneously involve dozens of participants, like in Whatsapp chats, for instance, would be a mistake. There is a structural resemblance between the two kinds of conversations, yet the scale of the latter is such that, in comparison with the scale of the former, leads to the emergence of new patterns, which are probably not random *per se*, but which appear as such if one attempts at grasping their structure, and especially their probable future evolution, through models that are based on conversation experience gathered at lower levels of complexity scale.

This leads to a fourth and alternative definition of randomness, which is neither ontological nor phenomenological nor epistemological, but is, essentially, semiotic. Randomness does not arise from intrinsic ontological characteristics, or from the imperfect perceptibility and, therefore,

phenomenological unfathomability of a subjacent regularity, or from the unsuitability of the formula that is supposed to grasp and, possibly, control it, but from the way in which a metalanguage is created in order to describe and make sense of irregularity. From this point of view, randomness emerges from the adoption of a metalanguage issued from lower levels of complexity of interaction for the description and interpretation of higher levels of it. In the theoretical framework of mathematical network analysis, for instance, the virality of a conspiracy theory that spreads throughout digital social networks appears as random or even as chaotic if it is described and analyzed with models of interaction that apply to exchanges at a different scale. What is totally unreasonable at this scale, however, for instance that the final result of the conversation might be such that is completely unintelligible in relation to the individual contributions of the interlocutors, might turn out completely reasonable at a superior scale, where the way in which individuals, through their communicative behaviors, affect the final setting of the network and the predominant cognitive and emotional representations circulating through it, substantially changes.

Ⅳ. Semiotic Randomness

Defining randomness in semiotic terms, that is, as an epistemological randomness that specifically emerges from the application of a framework of intelligibility to a phenomenological situation and, therefore, from the opaqueness that results in adopting frames whose diagrammatic complexity is inadequate to the scale of complexity of the range itself of phenomena under observation, requires a fuller consideration of the problem with respect to the kind of semiosis that it involves. The customary description of semiosis in the terms coined by Charles S. Peirce usually entails a certain amount of repetition, if not a manifestation of recursion. In Peirce, whose semiotic understanding in this as in other domains is essentially modeled after Kant's gnoseology, the ontological dimension *per se* cannot be grasped by the human mind, which, through the senses, can only receive the phenomenological stimuli that this ontology supposedly emanates, stimuli whose conformation ultimately depends on the interaction between the structure of reality and that

of cognition, defined as the system of the bodily sensorium and the cognitive reception of it.

An object of potential knowledge, therefore, is only perceived under certain respects or capacities, in a way that can be effectively evoked in optical terms (an optical metaphor being already implied in the etymology and meaning of the concept itself of "respect", coming from the Latin "respicio", whose many acceptances all revolve around the idea of looking at something from a particular angle): ontology never appears in full light, but is lit by cognition in such a way that only a part of it becomes visible, whilst the rest of it remains in darkness or in nuanced shadows. What determines the particular nature (that is, the intensity and the angle) of the light projected onto the ontology of reality is a combination of nature and culture, of the neurophysiology of cognition interacting with the cultural patterns that, in a human society, determine the formation of cognitive habits.

The way in which a certain interplay of the cognitive physiology of the species and the symbolical patterns that it has deposited in cultural memory casts a given light onto the supposed ontology of reality is what the semiotics of Charles S. Peirce synthetically calls an "interpretant". An interpretant is the conjunction of natural and cultural schemes that predetermine the potentiality of the way in which reality might become significant to human cognition and understanding. It is just a potentiality, and not an actuality, for a myriad of codeterminations can actually inflect this particular angle and cause idiosyncratic variations of it. Such inflections too can be either natural or cultural, or a combination of both. Cognitive impairments of various kinds, including some temporary oscillations in the regularity of apperception, like in hallucinations or *déjà-vus*, can create actual interpretations, or interpretive tokens, diverging from the interpretive type of an interpretant; similarly, its cultural regularities are even more subject to fluctuations due to the unceasing modification of linguistic and cultural patterns in society.

Thus far, nothing is particularly novel in this account of semiosis in the terms of Charles S. Peirce. The questionable aspect of such account, indeed, emerges especially in relation to the fact that this model is not presented as static, but as dynamic. That is certainly necessary. Peirce contributes

enormously to the understanding of the human cognition by suggesting that the ontological reality is not seen simply through the light of a single interpretant but through the cumulative effect of a chain of them. So as to continue with the same optical metaphor, one might compare this process to that of an object that is lit by a source of light, whilst another source of light simultaneously enlightens the first, and a third one affects the visibility of both the second and the third one, and so on and so forth in a superposition of cognitive angles whose final effect is a summation of all the lights intertwining over the object itself. What is known of the ontology of reality, therefore, is not simply the selection operated by an interpretant, but that brought about by a chain of them.

Ⅴ. Semiosis Unchained

The designation of such conjunction of cognitive angles is a particularly complex and delicate subject. Why should one call this conjunction “chain” and not “series” or “system”? What does the chosen designation reveal of the way in which Peircean semiotics imagines the cumulative effects of many interpretants on the final cognition of an object? The metaphor of the chain suggests that, first, all the interpretants are somehow linked with each other and, second, that they come with a certain sequence. The mental process of the association of thoughts or mental images is often used in order to explain the way in which a chain of interpretants might affect the final result of a semiosis. This metaphor is certainly effective, but only to the extent that it is understood not as a random wave of mental images or thoughts, but as a concatenation of them that, as random as it may appear at first sight, actually follows a certain pattern.

That entails that the metaphoric description of the chain of interpretants must be understood, like many cognitive models in Peirce, not chronologically but logically. It is true that, from the point of view of the phenomenology of interpretation and cognition, one has the impression that interpretant A is interpreted by interpretant B, which is in turn interpreted by interpretant C, and so on and so forth, A coming before B, B before C, and C before the following interpretant. That impression, however, is only an epiphenomenon of

the most essential dynamic that links these interpretants not chronologically but logically, that is, according to a kind of causation. Interpretant C coming after interpretant B, which comes after interpretant A, is because something, either in nature or in culture, in the structure of the neurophysiology of cognition or in its cultural schematization, as well as in the interaction of both, determines this sequence. In other words, and in Peircean terms, an indexical logic seems to underpin the concatenation of interpretants that superpose their cumulative lights on the cognition of a certain object, although such indexicality, as always in Peirce, does not emanate from purely causal relations but from the way in which they are structured in individual and cultural cognition.

That is why an interpretant never strictly determines the following one, but is somehow determined by it. That is, in a nutshell, the difference between a causal understanding of indexicality, which is an improper interpretation of Peirce's thought on the subject, and a real understanding of indexicality: an interpretant A is in its turn interpreted by an interpretant B, which therefore inflects the effect of the first one cognition, but the emergence of B is not determined by A. If that were the case, interpretants would concatenate always in the same way, without any possibility of deviation. Hence, all interpretations would actually end up in the same result, which is not the common empirical experience of how a chain of interpretants works. On the contrary, the fact that indexicality in a chain of interpretants is never deterministic, accounts for the apparently chaotic nature of its concatenation.

To recapitulate: in Peirce, ontology supposedly exists but affects cognition through a natural and cultural filter, whose essence though Peirce characterizes not through a static diagram, like Kant, but through a dynamic diagram, semiosis, whose dynamicity is actually guaranteed by its triadic nature. The interposition of a third element into a relation opens up to the possibility of further interpositions, and so on and so forth potentially add infinitum. From the gnoseological point of view, however, as it was indicated earlier, it would be simplistic to understand this dynamic and triadic character of cognition in chronological and causal terms, meaning that each step in the chain of interpretants comes before the following one and actually causes it.

On the opposite, this dynamic and triadic character must be interpreted in logical and indexical terms, meaning by indexicality an approach that might take into account and explain the cumulative effect of the concatenation of interpretants as well as its apparently chaotic mushrooming. Why is it apparent? Because such concatenation, although it is not a chronological but a logical one, and although it is not a causal but an indexical one, actually follows some laws, or at least such as the assumption that the present paper would like to adopt. These laws are not those of physical causation but those of cognitive causation, which are essentially the laws of intentionality.

Understanding individual and cultural cognition as semiosis implies that, at each step of the chain of interpretants that leads from the supposed ontological source of it up to the final determination of meaning, there is freedom, not necessity. Neither individuals nor cultures are ever physically compelled to think about reality as they do. That means that intentionality rules at every step of cognition, for at every ring in the chain of interpretants there is the possibility of choice. Each choice, then, somehow retroacts on the previous ones, until a particular quality of light, given by the superposed lights of all the interpretants that have chained up in the semiosis, manifests itself in cognition. The triadic model of the sign, the diagram of semiosis, and the notion of the chain of interpretants are nothing but an elegant philosophical attempt at explaining the fact that the light of knowledge is infinitely changing, yet it is not unpatterned. Neither is intentionality. Affirming that it is involved at each step of semiosis, and for each ring of the chain of interpretants, does not mean that such intentionality is anarchic. It follows, on the contrary, patterns that are pre-configured by both the nature of cognition and the culture of it.

Ⅵ. Semiosis in Chains

What is the origin, then, of the impression of chaoticity and randomness attached to the idea of “unlimited semiosis”? It is to this regard that the conceptual metaphor of “the chain of thoughts” comes short of explaining the actual dynamic of “the chain of interpretants”. In a typical session of mental associations, either individual or in couple or in group, the word (and idea) A

will lead to the word (and idea) B, which will lead to the word (and idea) C, and so on and so forth, through a sequence that is free but not unpatterned, intentional but not unstructured. That is evident when this mental activity is turned into a group play: to the stimulus-word "water" one might answer with "fire", or with "lake", but not with "triangle", for the rhizomatic structure of the cultural encyclopedia deposited in common sense does not allow this association, at least not in the Western culture.

This game, however, only imperfectly renders the nature of the dialectics between indeterminacy and determination in unlimited semiosis; in the game, indeed, the equilibrium of this dialectics is always constant, or depends, at the most, on the structure of the semantic connections irradiating from each word. There is, that is true, a cumulative effect in such game, but its resonance is limited. When I say "water", and someone else says "lake", and I subsequently say "sea" to that, "sea" and "water" are connected, but the impact of the first word on the emergence of the third one is only chronological, not logical, it is causal, not indexical. I say "sea" because someone else said "lake", and this someone else said "lake" because I, in turn, had said "water" before, but the word "sea" is not connected anymore with the word "water" directly but through the chronological and causal mediation of the word "lake". The nature of the interplay between determinacy and indetermination, necessity and freedom, remains unchanged at every step of the game.

Such is not the case in that special game that is unlimited semiosis. When an interpretant casts its light on an object, and is in turn cast light upon by another interpretant, the final light depends on the interplay and superposition of the first two. Also, at each new light that superimposes its pattern of luminosity and darkness, brightness and shadows onto an object of cognition, thus patterning its reception in semiosis and understanding, the equilibrium between determinacy and indetermination, necessity and freedom, changes. As the chain of interpretants that lit up a certain object stretches forward, extending through cognition, the level of determination changes according to a logic of scale. As a consequence, it would be a mistake to believe that all the interpretants involved in a semiosis determine the final meaning of an object in the same way; on the contrary, they do so with a cogency whose scale

decreases as subsequent interpretants are involved in the semiosis itself.

The metaphor of a stone thrown into a pond is perhaps particularly adequate to evoke the growing level of indeterminacy in the concatenation of interpretants. Interpretants that are close to the point in which the stone falls are sharper in definition and contour (the stone in the metaphor represents the object, an object that turns invisible at the same moment in which the water rings its, the stone's, fall produces start to appear, and is therefore only supposed to have existed both logically and chronologically); such first rings emerge starkly as perfect circles around the spot in which the stone has fallen and are, hence, also easy to be considered as its signs; as one moves away from the center, however, one comes across circles, although connected in shape with the nearest ones, and although appearing simultaneously with them (a chronological substratum persists in the metaphor but it should be disregarded so as to understand the logical nature of semiosis), whose appearance becomes less and less defined, until they seem to merge with the surrounding water and vanish into it.

Other aspects of this metaphor are worthy of consideration. The number of rings that are seen around the point in which the stone has fallen into the lake somehow depends on the attention of observers, but also on the adopted instruments of observations. The more one considers outer rings in water, the more the adopted instruments of observation must change, since they, the rings, will not be visible any longer, and at some stage will actually turn into vibration, until they will actually disappear into that same indistinction from which the throwing of the stone, that is, the mutual impact of the object with the plexus of cognition and culture, has had them emerge and give shape to their phenomenology.

Ⅶ. Semiosis and Semiosphere

The metaphor should suggest some conclusions about the nature of the semiotic definition of randomness and its consequences for the approach of social sciences to the notion of emerging phenomena. An intriguing morphological resemblance holds between the metaphor of the stone thrown into the pond and the rings it gives shape too (metaphor through which the

present paper has sought to visualize the dynamic and logical functioning of unlimited semiosis especially as regards the quality of interpretants in their concatenation and the relations they have among themselves and with the center) and the diagrammatic metaphor of the semiosphere. In Lotman's semiosphere too, indeed, there is a center that defines the conditions according to which meaning irradiates all around, yet these conditions are respected in an increasingly loose way as one moves from the center toward the periphery, until the semiosphere appears as so poorly structured that it actually yields to neighboring centers of gravity and structuration, that is, to other semiospheres. Interestingly, the analogy between the metaphor that explains the nature of the concatenations of interpretants in unlimited semiosis and the schematic metaphor of the semiosphere also concerns the way in which the periphery of the structure is imagined, that is, as a liminal area where meaning inexorably sinks into chaos and indistinction, in the case of semiosis, into chaos and barbaric behaviors, in the case of the semiosphere.

Such analogy, whose articulation could expand even more, should suggest that, in treating the semiotic randomness of meaning, one should adopt the same constructivist perspective that predominates in the current understanding of the relation between a semiosphere and its outer world. When a sign emerges, that occurs because an individual mind, that is, an interpreter, has turned the reception of physical stimuli from the environment, through the filters of both the physiology of perception and the influence of culture, into an occasion for meaning. The inner nature of this operation is such, though, that such emergence cannot be simply reduced to a coupling, to the dyadic attribution of a meaning to a stimulus. On the contrary, the semiosis provoked by the stimulus comes about through that concatenation of interpretants whose dynamic the metaphor of the stone in the pond has tried to describe. On the one hand, the fact that this dynamic, instead of simple coupling, characterizes semiosis is probably adaptive: the former allows individuals to respond to the environment in much more a creative and flexible way than the latter would do.

On the other hand, if interpretants were mushrooming around a given object in a totally random, chaotic, unpatterned, and unstructured way, then

the adaptive character of this cognitive mechanism would probably turn into a social impairment: no pragmatic coordination among members of a group would be possible if their interpretations of a simultaneously received stimulus or series of stimuli could not somehow give rise to a certain degree of isomorphism and, therefore, coincidence and understanding. Incidentally, that is also the reason for why human mutual understanding is so different from merely machine coordination: human beings successfully understand each other, and therefore efficaciously act together, not because they coordinate their actions, but because they coordinate their thoughts, including those particularly complex thoughts that we call emotions.

Ⅷ. Interpretive Scales and Meta-habits

Such coordination is possible because individuals in a group are somehow compelled by shared common sense not much to adopt the same interpretants (that is a usual but wrong simplification of what happens in social interactions according to Peirce's semiotics) but rather to adopt the same scale of interpretants. They spontaneously yield to a meta-habit that consists in urging them to curtail concatenations of interpretants to the extent that is required in relation to the scale of semiosis that is predominant in a certain exchange. When the philosopher meets another philosopher in a roundtable at a congress, for example, they would both betray their role and disobey the rule of their communicative exchange were they to engage in a stereotypical conversation about a given philosophical topic. Avoiding the stereotype of the habit is difficult in philosophy too, and even more difficult is the trap of the stereotypical effect of meta-habits, yet if the two philosophers embrace their mission to the utmost extent, they should actually engage in an unceasing activity of deconstruction and reconstruction of semiotic habits. Were they to meet at lunchtime, though, and exchange platitudes with other eaters, the scale determining the formation of habits in such case would be completely different; of course one is free to philosophize at lunch table as well, but with the risk of upsetting or simply annoying or at least puzzling those who, instead, abide by the non-written norms of conversation among strangers and simply exchange small talk.

According to this modeling of semiosis, when a stone hits the surface of water of the pond, and sinks into it, simultaneously creating the visible traces of this impact, that is, the rings that irradiate from the center of it (out of metaphor: when the ontology of reality hits the senses through cognition and cultural habits of interpreting), a halo is created around the object, another optical metaphor to render the complex superposition of lights that the interpretants superimpose on each other in unlimited semiosis. This halo of meaning becomes increasingly fuzzy and ethereal moving away from the center of the impact, until it actually merges with the surrounding luminosity, or is overshadowed by the light created by other centers of semiosis. If the structure of the sign itself requires already a non-dyadic and, therefore, complex modeling, since it systematically emerges from a triadic interaction, the modeling of this halo of unlimited semiosis requires even more complex diagrams, which should take into account not only the sequence of interpretants in the concatenation of them that emanates from the center of semiosis, but also the multilayer and complexly stratified patterns that these interpretants cumulatively create around a semiotic event.

At each superposition, indeed, the extent of freedom of intentionality increases, to the point that, as the chain of interpretants moves away from its center, the constraints that common sense imposes on them become virtually absent, so that the periphery of the halo surrounding the semiotic event tends to vanish into unpatterned light. In the proximity of a semiotic event (that is, the impact of the ontology of reality with the senses through cognition), not only sociocultural meta-habits but also and perhaps primarily cognitive mechanisms favor the formation of habits. What is a habit, indeed, if not the socially shared attribution of a certain measure to the ring of light that surrounds an object through an interpretant? Habits, though, can always be challenged, exactly because of their stemming from a triadic and non-dyadic relation. That means that, on the one hand, common sense tends to crystallize unlimited semiosis into conventional understanding; in normal everyday conversation, for instance, the meaning of most objects is not constantly challenged but received through the regular structuring pattern of common sense. On the other hand, though, individuals as well as groups are at least

potentially always able to deconstruct these habits.

Ⅸ. Inhabited and Uninhabited Semiosis

Another improper vulgate of Peirce's semiotics interprets this potentiality of deconstruction always unidirectionally, that is, in the sense of the possibility of dismantling existing social habits of interpretation by increasing the scale of patterning required in a certain semiotic event and, therefore, producing a reading that sees more rings around the stone, stretches the observation of the sign's halo farther, and detects patterns in more remote stretches of the concatenation of interpretants through semiosis. That is what poets and artists do spontaneously and what semioticians themselves do systematically, seeking to pattern the social circulation of meaning through articulations that are thicker than those provided by common sense.

The opposite possibility, though, is commonly neglected: whereas the arts and semiotics usually work for the a wider intelligibility of the field of semiosis of an object, pushing its habits forward through the creation of more sophisticated scales and, therefore, meta-habits of interpreting, a symmetric force is also active in all semiospheres, exerting an opposite impulse towards the narrowing down of semiotic habits. All instances of oversimplification work exactly through this dynamic: they encourage interpreters to actually stop their semiotic efforts short of the range of possibilities that are provided by common sense itself.

These two trends, the one that operates so that interpreters rearticulate their habits through the adoption of meta-habits that respond to a more sophisticate scale of interpretation than that provided by common sense, and the other one, on the contrary, that exerts its agency in the opposite sense of not only disfavoring such complexification but urging, also, toward the simplification of the existing habits through the adoption of meta-habits stemming from a narrower semiotic scale, deserve a better characterization. Surprisingly, indeed, they might be found responding to the same necessity, which is the one of making sense of emerging phenomena in the ontology of reality, as it is perceived and received by the senses and cognition.

In other words, re-articulations of interpreting habits through either over-

complexification or oversimplification might just be two alternative but analogous ways to respond to a mismatch between existing patterns of interpretation and the complexity of reality. That is quite evident in historical circumstances in which individuals and groups must deal with the existence and social effects of emerging phenomena, that is, with the fact that increasing of quantity and speed of relations and interactions in a system leads the system itself to produce phenomena that cannot be explained anymore by the scale of understanding that has proven to guarantee successful interactions in that same system. For instance, application of digital and telematic technology to the financial field has increased the quantity and speed of interactions in it to the extent that it has given rise to emerging phenomena, that is, outcomes that could not be explained with the logic of understanding that was commonly adopted as a standard scale of interpretation in such domain of interactions.

Reactions to this mismatch can be twofold: on the one hand, a dismantling of existing meta-habits so that semiosis can be reactivated and possibly lead to taking into account interpretants which were previously excluded from the range of crystallized habits of meaning. For example, some scholars might relinquish their most deep-seated interpretive meta-habits and start considering not only human beings but also machines and even disembodied financial algorithms as independent economic agents, or start to describe and interpret interactions in the economic and financial domain as if they were interactions at another level and scale of complexity, for instance, organisms in biological systems of interaction.

On the other hand, inadequacy of the common interpretive habits can also lead to the opposite trend of reducing the scale of interpretation, dismantling the current meta-habits in the sense of an increased simplification of understanding and curtailing, as a consequence, the levels of interpretants considered in making sense of reality. In extreme cases, the oversimplification may be so drastic as turning a semiotic event into a physical event, a triadic relation into a dyadic one. That is, for instance, the cognitive logic beyond many conspiracy theories, which socio-culturally operate in a direction that is opposite to what is taken by paradigm-changing social scientists: instead of

rearticulating the meta-habits of interpreting so that they take into account interpretants that were not modeled by the previous habits, they discard even presently modeled interpretants as insignificant, thus producing simpler explanations of reality. On the one hand, then, increasingly sophisticated macro-economic theories end up detecting agencies also where they would remain unseen and undetected by the previous interpreting patterns: algorithms start to be part of a larger picture. On the other hand, the picture shrinks to such an extent that only a very reduced number of elements remains part of it: Jews move it all. The first interpretive trend starts to see an agency that was hitherto unseen; the second interpretive trend starts to disregard agencies that were hitherto part of the system, neglecting the fact, for instance, that so many important operators in the global financial systems have no relation with Judaism.

Along the metaphoric lines proposed earlier, in the first case scholars adopt theoretical and sometimes even empirical instruments so as to see rings where they would previously see only water; in the second case, conspiracy theorists get rid of existing theoretical and even empirical instruments so as not to see some of the further rings irradiating from the stone, concentrating only on those that are starkly visible to everyone. The optical metaphor is valuable too: on the one hand, another beam of light is projecting onto the existing ones, superimposing its halo on them; on the other hand, existing lights are switched off so that only one stark luminous focus is projected onto reality.

X. Over-complexification, Over-simplification, and Significance

Clearly, operations of over-complexification extend the range of the significant: what was considered as random, chaotic, unpatterned, and unintelligible becomes structured, patterned, and decipherable. Analogously, operations of oversimplification evidently shrink the domain of the significant, turning into insignificance all that lies outside of the visible rings turned into meaning by the narrow-scale, weedy meta-habits selected by curtailing the level of articulation of common sense. These two tendencies, which manifest themselves at the levels of both individual and social cognition, also have an

equivalent in the development of the semiosphere, which can either include more and more external and hitherto considered as chaotic and insignificant elements within the circle of patterned and understandable meaning (through complex operations of transduction and translation across the frontiers of the semiosphere, operations that work exactly in the direction of altering and increasing the scale of meta-habits adopted to make sense of reality), or, conversely, shrinking the circle of the semiosphere, expelling as insignificant many phenomena that were hitherto included in the domain of the meaningful; such dynamic manifests itself, for instance, when metaphors of "naturality" or "authenticity" are adopted so as to exclude from the range of the significant, from that of the morally acceptable, and even from that of the legally permissible, practices of meaning that were previously part of common sense, albeit only at the margins of it: societies may, for instance, adopt meta-habits whose scale is narrow enough to reinterpret admissible systems of kinships, excluding from the range of the significant same-sex marriages, interreligious marriages, or even interethnic marriages (as it tragically occurred with anti-Semitic racist laws in Nazi Germany).

Over-simplification leads to narrowing down the span of understanding but is, nevertheless, a successful socio-cultural trend in some contingencies, and especially, as it was indicated earlier, in cases of increasing quantity and speed of relations and interactions within a system. The reasons for such success can be explained in relation to the fictional anecdote, Kieslowski's movie, evoked at the onset of the present paper. The father in the movie is an interpreter whose interpretation of the ontology of reality tragically fails. Reality presents to it the severest of all final counter-interpretants, that is, death. The son's accident leads to the incontrovertible conclusion that the father's adopted habit of interpretation was wrong, at the semiotic, epistemic, and even ontological level. Indeed, most of the habits of interpretation followed to explain reality in conspiracy theories were also wrong, and would probably also prove mortally if they were left to lead to full courses of action. That is actually occurring to a certain extent in the case of some conspiracy theories, for instance those in accordance to parents' stopping vaccinating their children, thus giving rise to epidemics in their children's schools, fortunately

with consequences that are, at least thus far, less serious than what was faced by the father in Kieslowski's movie.

The case of this father, though, is different. He does not adopt a conspiracy theory or a clearly non-scientific interpretation of the reality of the lake. For instance, he does not tell his son to skate unworried on the thin ice of the lake because he, the father, will actually pray for the ice not to break. He is actually adopting a system and scale of interpretation, that of present-day mathematics and physics, which is acclaimed and unchallenged in the domain of contemporary sciences. Physics is what allow airplanes to fly, after all. Indeed, the father's tragic mistake does not consist in adopting physics as matrix of meta-habits for interpreting reality, but in adopting it in relation to the wrong domain. The father, tragically, does not understand the difference between an ideal lake and the real like, between the ice of physics and the ice of nature, between a laboratory where only a number of variables are allowed to interact in the field of an experiment, and a level of complexity of reality outside the laboratory, where the number of these variables explodes.

As a consequence, although physics is clearly not a conspiracy theory, the father adopts it in the same way as conspiracy theories are usually embraced, that is, so as to drastically curtail the scale of complexity characterizing the formulation of interpretive meta-habits and semiotic interpretations. That happens because this kind of over-simplification is not without virtues (or rather, pseudo-virtues). In Kieslowski's movie, for example, oversimplification introduced by mathematics and physics allows the father to give his son a rapid and unambiguous answer, which happens to be the wrong one, unfortunately. A father with no mathematics and no physics would have probably more safely adhered to common sense, and told the son to wait, and advised him to see first whether other people were skating, and even probed the ice himself before letting his child skating on it.

Out of the example, drastic over-simplifications are successful for, by reducing the number and scale of potentially significant elements considered in the process of making sense of reality, they give rise to fast coordination and immediate action. Anti-Semitism tragically spreads for many reasons, but one of them is certainly related to the pragmatic efficacy to which its

oversimplification gives rise: the extermination of all Jews will give rise to the elimination of the economic crisis. It is quite simple to federate a community of ideas, emotions, and actions around such a simple and straightforward plan. On the contrary, the subtleties of scholars, not to speak of those of philosophers and semioticians, do not as immediately lead to coordination and even less to action. They can actually bring about more ambiguities, indeterminacies, and inaction. They increase the range of freedom to which intentionality is entitled to, thus making the social coordination of intents more difficult. They intrinsically strive, in the long term, for the reduction of the domain of randomness, yet in the short term, and especially in the eyes of the over-simplificators and their audiences, appear as agents of chaos and indeterminacy.

Ⅺ. Conclusions: Hoping for Mistakes

That is the case with medical science too; in fostering and moving forward the frontier of understanding, medical researchers must actually challenge commonsensical ideas that are at the basis of most medical practices, including the simple practices of self-medication. That should warn one about the fact that attention to the "accidents of over-simplification" should be paralleled by an equally keen attention to the "accidents of over-complexification". Unsuccessful interaction with the ontology of reality takes place not only when the scale of meta-habits is overly reduced, but also when it is overly increased. The father that over-simplifies the lake through physics makes a mortal mistake; but the father who would over-complexify it, for instance, by telling his son not to skate, lest a nuclear plant explode in that moment, melting the ice on the spot, would certainly save the son's life, but would also unduly shrink his, the son's, interaction with the environment. In the frame of this over-complexification, the son would never skate.

The efforts of scholars of all fields in the future will therefore have to be directed toward the task of understanding the correct scale at which understanding of reality must take place, and social coordination and action as a consequence of it. Over-simplifications as well as over-complexifications of all sort should be progressively discarded toward an ideal of reasonable

interpretive style, whose main virtue should be that of adopting suitable frames and meta-habits for guiding the interpretations of phenomena. The application of a poetical frame to the understanding of an airplane aerodynamics should be avoided as much as the application of a physical frame to the understanding of a sonnet; after all, everyone likely prefers to fly in airplanes engineered through physics and read sonnets written through poetry, whereas everyone would be terrified to fly in a airplane engineered by a poet, but perhaps also to read a poem penned by an engineer (unless he or she doubles as poet adopting an alternative interpretive style).

Extending the domain of significance over randomness is certainly an important human task in the long term, but in the short term should not give rise to the paralysis of common sense and action either. The only way to guarantee such balance between excesses of under-interpretation and excesses of over interpretation is to learn from mistakes; the clash between an interpretation and a recalcitrant reality provides, indeed, fundamental evidence in Peirce's semiotics, for it is exactly the resilience of reality that guarantees the evolution of habits and especially meta-habits towards more and more suitable frames of understanding. It is only to be hoped that the mistakes that will be necessary to change the scale of interpretation will not have to be too serious. Had the father in the movie a second son, he, the father, would not tell him to skate on the lake on the basis of a mere mathematical calculus, yet how tragic the mistake would be leading to such a better consideration of reality. Getting rid of pernicious ideologies and astute demagogues will be fundamental in order to let reality speak through the mistakes of the human interaction with it.

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