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Mind - Scarlet Ocean

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Indeed, I cannot think why the whole bed of the ocean is not one solid mass of oysters, so prolific the creatures seem. (...) There's the scarlet thread of murder running through the colourless skein of life...

Sherlock Holmes

It is good to rub and polish our brain against that of others.

Michel de Montaigne

Ray Birdwhistell – American anthropologist who was in direct contact with contemporary dance, a great specialist on human movements and non-verbal communication – launched, in 1952, an intriguing small book: *Introduction to Kinesics*.

Birdwhistell called *kinesics* the *automatic* corporal communication, what we communicate with the movement of our bodies without being aware about.

Eyelids movements, facial muscles, quick and small expressions, body position in movement, arms, chest, fast curvature with the neck, hands.

Birdwhistell said: «we do not communicate, we participate in the communication».

Bringing some recorders he even make a statistical research on the average time that, during the daily time, we use to communicate using words and arrived at a surprising conclusion: if we eliminate the silence of the conversations, great part of the people will not speak more than twelve minutes per day – all the rest is non-verbal communication.

He went ahead and demonstrated that only about 35% of what he called the *social meaning* of a conversation would correspond to spoken words.

He divided the corporal communication in true *quanta*, discrete units he named *kinemes*, as a reference to the *phonemes*.

If it would be possible to codify those kinemes, we would have a written language for the body.

In 1966, inspired on Birdwhistell, William Condon started the research of human body movements through an exhausting frame-by-frame analysis of 16 millimetres films.

Condon discovered that the people become, in one or other way, synchronized when they are talking or when they are involved in a same activity.

Soon, also Edward Hall would to carry through researches in this direction.

In one of the experiences, two people are connected to electroencephalographs and their cerebral waves are compared.

The experience showed that, when two people talk, their brain waves become very similar, as if it would be about just one brain.

It is enough, however, that a third person interferes – *entering* in the *environment* – so that the waves become different.

This phenomenon leads us to perceive something interesting: what we call *intelligence* and *language*, verbal or non-verbal, are not things rigorously placed *inside us*.

Beyond this, what we are is *between us*.

The history of the words enlightens, many times, the history of the ideas – as Herbert Read and Lewis Thomas always defended.

And the Indo European – a complex field of prehistoric languages extinct thousand of years ago – is in one limit of our jump to the past.

The word *intelligence* launches its more remote roots to the Indo European term **leg*, which meant *to catch, to choose*, but that also pointed to an idea of *similitude*.

It passed to the Greek as *legein* that fully indicates the idea of *similarity*.

It was transformed into the Latin *legere*, that – departing from the ideas of *to catch, to choose*, to become *similar*, it means *to read*.

One of the origins of the word *religion* is exactly this.

When we read, many times automatically, without being aware about it, we make exactly those operations: we *catch*, we *select* and we deal with relations of *similarity* or *contiguity*, which are kinds of *similitude*.

It is from the Greek root *legein* that the idea of *logos* appeared – which implicated the notions of *choice*, of *similarity*, but also of *communication*.

Along the centuries, some thinkers took the *logos* as the expression of the word, of the verbal communication par excellence; but other ones, like Heraclitus, Thales, Anaximandrus or Pythagoras had the *logos* as the *order* of the things, what, of course, it implicates language, but not only the verbal language.

An idea that is closer, in a certain sense, to that we understand as *dharma*, but intensifying the question of communication.

If the *logos* is the *order* of the things – and *order* is nothing more than the principle of differentiation – it cannot exist without communication that, in its turn, would not make sense without the idea of *similitude*.

The word *intelligence*, as well as the term *intellect*, appears from the fusion of *inter* and *legere*.

Diving in the paths of the Latin term *inter*, we reach the Indo European root **en*, that meant *inside* and that passed to the Latin expressions *in* and *inter*, the later indicating *inside of two*, *inside of both parts*.

Thus, the words *intellect* and *intelligence* etymologically means not an *inside approach*, but a *choice*, a trace of *similarity* that is common to both parts.

Something that is never in only one side.

Curiously, the word *clock* – in its Latin expressions – also has a profound relation with that old prehistoric particle **leg* – indicating the act *to choose* and the *similarity*. Associated to the Latin term *re*, that marks the *movement backwards*, the Portuguese word *relógio* meaning *clock* – *reloj* in Spanish – appeared, and *orologio* in Italian, *horloge* in French – following to the same steps.

That is, time measure nothing more is than the choice of elements indicating something backwards, something already happened.

On the other hand, the word *language* comes from our muscular organ we have in the mouth. But, if the term *language* is directly associated to our body, to a physical organ, the same does not happen with the word *voice*, which launching itself to the Indo European **vac* indicates the ideas of *communication* and of *deity*.

God and communication.

Therefore – in a certain sense – it is a contradiction to say *non-verbal language*.

There is the indication of how old the verbal language sovereignty on other forms of language is, even if such sovereignty happens by convention and be questionable, as Ray Birdwhistell showed us.

We deal with *communication*, which appeared from another prehistoric term: **mei*, that indicated the idea of *exchange*, something that passes from one to another side, a thing that is in the *transition* process, in the *middle*.

It is of that old Indo European expression that the word *municipal* is born: a condition where people are actively exchanging goods of all the natures, material and incorporeal.

Associated to the Latin *com*, *with* in English, that means the idea of *set*, of *ensemble*, we have the concept of *communication*.

Again, it is about something that is not departmentalised in a single place.

Although many people don't perceive, we originally elaborate the notions of *intelligence* and *communication* as things that do not belong to us, as elements that are part of a process, that are, in fact, a process *between* us.

Therefore, it is not surprising to identify a nature of *synchronization* in intelligence and in language, considered in its deeper spectrum.

Only the difference, the conflict, generates the consciousness – but the difference also brings in itself, in an inevitable way, the idea of equality and this one brings us that of similarity.

It only can be difference in what, in some way, has identity – if not we would not deal with differences, but with non-comparable things, things pertaining to categories or dimensions without any possibility of association.

Therefore, when we imagine extraterrestrial beings – and the Orwell's *War of the Worlds* is a clear example – we deal with something we already know.

Because of this, Plato defended that everything we discover we already know *a priori*, anticipating—in a certain way—a concept that would be established by Kant about two thousand years later.

Also because of this, the outcome of the *War of the Worlds* that George Orwell draws is even surprising, as it is obvious but not directly about our sensible world and, thus, it becomes something unexpected.

We aspire, in the Universe, to ourselves – without consciousness about that.

This cognitive resource belongs to the domain of the auto-similarity, of the fractals, of the symmetry.

Thus, we are *synchronized*.

But, what the nature of such synchronization is?

Why this synchronization happens?

At a first moment, we are immediately led to imagine being about a logical design inherent to any kind of communication – and surely it is what happens.

Here, the essential question is the *scale*.

Why communication is something so dynamic in our *scale*? Dynamic to the point to become what we vulgarly call culture, also in its ampler sense – a kind of *zeitgeist*, of total environment. Why, in this scale, communication is so typically human?

In general terms, we can consider intelligence as permeating everything, taking all matter as forms of memory – from a mineral to a forest.

Everything is some type of memory.

But, we distinguish this *total memory* from another one, which indicates an accelerated metabolism of ideas – the human scale.

And in this accelerated scale that constitute us, the intellectual interaction with stones, water or vegetables sounds as non-sense.

Thus, we deal with such specific scale.

In 1996, at the University of Parma, in Italy, Giacomo Rizzolatti, Vittorio Gallese and Leonardo Fogassi – three important neuroscientists – discovered a new type of neurone in our brains to which they gave the name of *mirror neurons*.

During an experience that aimed to better understand the cognitive functioning of monkeys, having one of them with the neuronal activity continuously monitored, Fogassi caught, by chance, a grape. They observed, with stupefaction, that when the monkey observed Fogassi catching the fruit, his neuronal activity was the same the scientists had registered when the animal caught, himself, a grape.

Immediately they asked themselves about the reason why the simple observation of an action had produced a same resulted, at the level of synaptic complexes, to that generated by the action.

They soon discovered that human beings always have those neuronal cells they called *mirrors*.

These neurons not only shot when a visual stimulation happens, but also when we receive stimuli of a different nature, even through olfaction, tact or hearing.

Because of this, we easily cry when we see someone crying.

To Vittorio Gallese, «action observation causes in the observer the automatic activation of the same neural mechanism triggered by action execution».

Much of the theatre is based on this phenomenon.

We try things we do not know through a *mirror* process.

The most impressive is the fact that such mirroring process doesn't obligatorily depend on our memory, on what we had already tried *before*.

If someone makes a complex corporal movement, for example, something we had never experienced before, our *mirror neurons* identify our entire corporal system, our proprioceptive mechanisms, and we tend to imitate, unconsciously, what we observe, what we hear or what we perceive in some way.

We move our eyelids, our facial muscles or fingers, for example, in parallel rhythms to someone is near us.

This makes us to become similar to people with whom we coexist for some time, or makes us to change when we penetrate more deeply in different societies – some people easily than others.

It is believed that autistic children have a deficiency in the set of mirror neurons, becoming less able to deal with activities that imply facial, vocal or even symbolic imitation.

This fascinating discovery raises a series of intriguing questions.

As an example, the principles of education in the West, which traditionally are based on punishment and reward, pass to be questioned.

Everything passes to be *contamination*.

Not directly dependent on our memory – at least on what we understand as short and long term memories – how an image, a sound, a taste or a perfume can unchain a non codified cognitive complex and until then conscientiously unknown?

Even the simple visual observation of two people touching themselves activates tactile mirror neurons complexes in the observer, making that, in a certain way, one can feel what is seeing.

This is the phenomenon explored by the erotic literature, for example.

In the case of the monkey and Fogassi's experience, the animal had previously experienced the action to catch the grape, but the *mirror neurons* are active for all imitation.

They constitute much of the base of what we call *learning* – and when we learn something, we still do not know it.

A newborn child that sees the mother making a specific movement, imitates it without knowing its *function*.

That is, the vision of an action unchains a motor process without *instruction*.

The origin of the knowledge passes to be understood as something designed by an essentially *teleonomical* and non-longer *teleological* nature.

The principle of the *teleonomy* implicates, in its turn, the idea of the existence while something *shared* – what leads us to Stephanie Lupasco's brilliant ideas.

We experiences this, every day, with what we call *sympathy* – word that appeared from the Greek *pathos* which indicates the idea of human experience, with a psychological nature, that added to *sym*, which points to the notion of *priority*, turning *sympathy* into the concept of a sensation of *common experience* already lived, but something immediate, like a kind of *deja vu*.

Or even with the *empathy*, that etymologically indicates an interior and shared human experience.

It is fascinating to imagine, for example, that our brains are, in some way, synchronized in this exact instant – and that such also happens with the speech, the image and the sound of telecommunication systems, without directly passing through a mutual and direct sensorial contact.

But, there still is an intriguing track clue – the words *image* and *imitation* have the same root, the radical *im*, of obscure, unknown origin.

Not only, we deal with the word *mirror*, which is *espelho* in Portuguese, *spècchio* in Italian and *espejo* in Spanish – all from the Latin *speculum* that appears from the Indo European **spek*, meaning *visual contemplation, attentive observation*.

The pre-historical **spek* also generated the word *spy*.

On the other hand, the English *mirror* and the French *miroir* appeared from the Latin *mirare*, which not only meant *to see* but also *to be amazed*, generating the word *miracle*.

Although other sensorial faculties evidence the unchaining of the *mirror neurons* activity, everything seems to converge to the *vision*.

In logical terms all *mirroring*, even that referring to a diachronic line, *line of time*, happens while a complete action, that is, while a *totality*.

This is the very first nature of the *vision*, the *systasis*, the whole took in a single shot.

There is no *mirroring* without the idea of *vision* – and there is no *vision* without *systasis*.

Beyond this, the researches developed by Gallese, Fogassi and Rizzolatti show that the *mirror neurons* phenomenon «enables the observer to use her/his own resources to experientially penetrate the world of the other by means of a direct and automatic process of simulation».

However, it think it wouldn't be about a process of *simulation*, not even about something like a *penetration in the world of the other*, as suggest by Gallese, Fogassi and Rizzolatti.

In fact, the idea of *simulation* implicates that one of the *set* and not of a *diachronic* occurrence, of a line of events in time.

The word *simulation* appears from the Indo European **sem*, which indicated the idea of unit inside a determined set. From there, also, we have the term *similarity*.

Simulation is directly related to the idea of vision.

However, *simulation* implicates a clear difference between a first and a second, in a process of *mimeses*, of *imitation* – which implicates a teleological, a directional process, an *intentional action*.

Also considering the existence of a fabulous labyrinth of mirrors, there is no place for the idea of *penetration in the world of the other* if not by the ways of the illusion of the contiguity.

Contiguity – appearing from the predication: this *is* that.

Metaphor.

Here, we have evident Charles Sanders Peirce's defence according to which metaphor belongs to a more complex category of relations and, therefore, more degenerated. On the other hand, the similarity relations will be more direct and characteristic of a *scientific point of view*.

In this way, similarity would be more related to the act of share and to the notion of contamination, than to the conventional notion of imitation, of something that copies another thing.

Although Gallese, Fogassi and Rizzolatti insist on an imitative nature of this neuronal system, mimeses would happen more as something *non-teleological, non-directional, non-intentional* and *a-individual* – having the particle *a* as a kind of inclusive negation.

We do not deal with individual worlds operating – in an almost mercantilist way – with other worlds; but yes with a sharing dynamic universe of combinatory expansions, with diverse natures, where our *individual worlds* are subtly and ephemerally projected as true abstractions.

But, there are two other intriguing and fundamental factors unchained by the discovery of the *mirror neurons*.

One of them is the question of the *prevision*, or *foresight* – and again here we take an important term for the visual faculty.

When we establish a *mirror neuronal labyrinth*, we carry through a universe of *foresights*.

That is, the assemblies are there, dynamically, even before the conscience of a determined action.

However, it is about prevision without intention.

And there also is the question of the *disincarnation* – we pass to understand good part of the cognitive system as pertaining to a virtual universe, while full potentiality, formalised by that mirror informational labyrinth.

What brings to our mind, again, the celebrated and sensational affirmation by Marcel Proust, through his wonderful dream trips, according to which *what we know does not belong us*.

We are no longer in absolute possession of our bodies, like the world of literature made us to believe.

When we take the radio, the telephone or the television as sensorial prosthesis – to only refer three media – we do it as part of such process of *disincarnation* and *prevision*.

Such condition of *disincarnation* – to know without bodies – in good part is nothing more than a projection, in logical terms, of the process characterized by the *mirror neurons*, something that is intimately related to the question of *identity*.

All *violence* is just a search for *identity* - systemic condition that is *designed* by a determined *scale* of those relations.

When we change the scale, we also change the meaning of *identity* – and, of course, also the sense of *violence*.

The question of *identity* is something that involves all History of the human being.

When questioning the sensorial *disincarnation*, the principles of scale, identity, imitation and cognitive principles, another no less fascinating hypothesis appears to us: the probable sprouting of a *mirror neurons* explosion about sixty thousand years ago, as the origin of the emergency of the human being as we know it.

Why, as everything indicates, only about sixty thousand years ago is that the human being such as we presently know emerges, if since about two hundred thousand years, at least, our organism already had the same characteristics of now?

Few weeks ago, in the end of 2005, the neurologist Vilayanur Ramachandran advanced with the hypothesis of that what the *mirror neurons* were responsible for the appearance of the human being such as we know today only about sixty thousand years ago, even considering that our whole organism apparently was already ready since a long time before.

It called this event the *Big Bang* of the human evolution, what turned possible what we generated as *language*, in its wider sense, verbal and non-verbal.

In the truth, surely, the best hypothesis about what provoked this *human explosion* would be a mutation in the *scale* of the presence of the mirror neurons.

Such as it was demonstrated by Gallese, Fogassi and Rizzolatti, other animals also have this type of neurons.

In a universe of mirror relations, of exponential nature, an apparent small change can generate a radical metamorphosis.

Implicating the *prevision*, we would discover there the roots – certainly the most remote – of what we call *predication*, the most distant origins of the writing, of the pictographic representation, of the human *revelation*.

Everything no longer as *representation*, but while process.

Thus, the *mirror neuron* model discloses the world of aesthetics as the world of action.

It does not matter what we do, or how we do, the interaction is an essential element in cognition.

We can observe something, a movement, an action, and will be *acting* synchronically.

And, in an apparent paradox, all is *construction*, all the time.

When we see a person sad, we feel, in some way, that sadness.

Many times we say that we are contaminated by such sadness.

When we observe two people touching themselves, we feel in ourselves their touches.

And here, the old question appears again – to feel through what it is not the thing in itself.

Like when we see a movie or when we read a book.

This *way* – that directly brings us to the cinema, to the radio, to the book and, more than everything, to the artwork – shows us another fascinating enigma: the mirror neurons *imitate* the body actions, but would them be specialized and restricted to those actions?

Would them be isolated from the sensorial and cognitive experience we know as aesthetic, in its most profound sense?

That is, would be the aesthetic a second instance phenomenon and, therefore, degenerated?

When Piet Mondrian abstracted the images of the tree and of his atelier, generating, among others, his fabulous *Victoria-Boogie-Woogie*, was him isolating himself from the *mirror neurons* phenomenon – as if constituting, in fact, a universe essentially constituted by symbolic relations?

What it means to say – would be the world of abstraction confined to a universe that does not enclose those cells called *mimetic*?

The answer seems to be in the question.

The word *abstract* seems to have been used for the first time by Boethius in the year of 1361. It appears from the fusion of *abs* and *tractus*. The Latin particle *abs* appears from the Indo European **ap*, that indicated the *origin of the thing*, and *tractus* appears from the Latin *trahere*, that it means *to bring*.

Latin *trahere* also indicated the act of *to milk*.

Thus, the term *abstract* etymologically means *to bring the origin of the thing*.

The origin of the thing is what it has as most essential, its basic and very first traces.

An abstraction is nothing more than the essential figuration of some thing, sublimation.

Even when Pollock created its works, they were not without an order, a principle of differentiation – and this is this principle that fascinates us, that turns his paintings unique, however any person can displeasing throw ink on any surface.

When we deal with abstraction, we deal with what more concrete happens in perception and cognition.

Now, it is interesting to come back to the *mirror neurons*, and to quest the widened implications of their existence.

Like as to imagine when the imitation happens, in non-intentional terms, beyond what is directly related to our bodies.

When we enter inside a space, like in a building for example, we penetrate inside a logical complex of sensorial data of the most diverse natures.

We are *formed* by that space, for that logical universe – having the logic as the structuring principles of thought.

Everything we call *environment* is information.

We navigate in complex informational structures that *we are*, individual and collective, to be *and* not to be.

The discovery of the *mirror neurons* places us face to intriguing scenery.

The environment, as informational fields that *form* the mind, that structuralizes the unconscious, will permanently be constructed and changed not only by our memory systems, be we dealing with the hypothalamus, the paper or the computers, but also by a sensorial complex of *mirrors* continuously reflecting themselves.

Therefore, culture works as a true alive organism.

Following Freud's steps, the *culture* – took in its wider sense – is a powerful tool for criticism and opposition to the *designs* of Nature.

That is, beyond the implications of a direct causality, of a *local causality* – like the gravity laws, for example – we permanently immerse into a field complex made of lines, light, colours, sounds and all the type of sensations that *form an environment*.

Inside and outside, at a same time.

However, if we would not have another tool as an element of permanent deconstruction of the *culture*, we would live submitted to immutable laws and rules.

This deconstruction element of culture, in its generative face, is what we know as *art*.

But, operating inside a mirror labyrinth, a non-intentional system, what would be the true paper of art?

Marshall McLuhan defended that the «enormous gap between human's natural equipment and his technology has gotten bigger and bigger... the artist's role is to fill that gap by returning and modifying the perceptual apparatus that enables us to survive in a rapidly developing environment».

However, if it would be like that, the rule of the artist would be to be inevitably launched to the past, to the *gap* between our sensorial apparatus and the environment in permanent development.

And here two brief considerations have place.

In first place, contrarily to what happens with the technical tools, art does not obey to the natural selection principles.

Even being a criticism of the culture, art belongs to the universe of quality relations. It does not happen, in an artwork, the idea of improvement through tentative and error, not even the principle of refutability is possible.

When the refutability principle is possible, it is no longer about art, but yes about *culture* and *entertainment*.

Also, in the deconstruction of the culture, and with it that of the technique, incorporating it in its most advanced levels, art aggregates new elements launching itself to the unknown – not acting like the crime, which simplify the relations and degenerates the environment.

That is, art is not an exercise of ability, of skill, but a deconstruction at the cognitive and sensorial level.

Because of this, it means *Enlightenment, discovery*.

The existence of *mirror neurons* shows us how what we are, is *between* us.

In the process of this type of neurons there is no before or after, neither something we could call balance or equilibrium between two different parts, but a single system in dynamic and permanent transformation.

All this remind me the fragment of a small poem by Huang Po, a Zen master who lived in China, in the 9th century:

*Mind is a mighty ocean, a sea that knows no bounds.
Words are but scarlet lotus to cure the lesser ills.*