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# *Cultural Shock, Neuropsychological and Cognitive Functions of Symbolization and Psychiatric Risk*

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## RÉSUMÉ

L'évolution de la société qui nous a propulsés vertigineusement vers l'ère post-industrielle, a provoqué une complexification progressive des *mécanismes psychoculturels d'adaptation,* aussi bien chez les populations occidentales que chez les non-occidentales. La *psychiatrie classique* s'est vue alors contrainte à revoir ses *modèles épistémologique, nosologique et thérapeutique,* ouvrant ainsi un nouveau champ de recherche : celui de la *psychiatrie sociale.*

Pour mieux analyser ce phénomène nous avons choisi un domaine précis de l'activité mentale et plus particulièrement, de la *fonction cognitive* impliquée dans cette *métamorphose psychosociale :* celui des *mécanismes neuropsychiques de symbolisation du langage écrit.*

Les *troubles mentaux* les plus significatifs, qui découlent des chocs psychoculturels dans le domaine en question, s'avèrent être *l'inhibition intellectuelle* et *l'anxiété anticipatoire.*

MOTS CLÉS : Psychiatrie sociales, « *neuropsychomotricité* », fonction cognitive, choc psychoculturel, langage écrit, inhibition intellectuelle et anxiété anticipatoire.

## ABSTRACT

The evolution of society which has propelled us suddenly into the post-industrial era has progressively complicated *psycho-cultural adaptive mechanisms* in both Western and non-Western people. *Classical psychiatry* has had to review its *epistemological nosological and therapeutic models* in the light of these development, thereby opening up a new field of research —"*social psychiatry*".

In order to better analyse this phenomenon, we have chosen a specific area of the mental activity and more particularly, the *cognitive function* involved in this psycho-social metamorphosis: *neuropsychological mechanisms* of the symbolization of written language.

The most important mental disturbances resulting from psycho-cultural shock in the area in question are *intellectual inhibition* and *anticipatory anxiety.*

KEY WORDS: Social psychiatry, "*neuro-psychomotricity*", cognitive functions, psycho-cultural shock, written language.

*"Social Psychiatry"*, through its own epistomological model, implicitly challanges science which has traditionally dealt with the treatment of psycho-affective disequilibrium and mental pathology.

It employs a notion of **difference** diametrically opposite to that which has allowed for the creation of traditional nosographic tables or of more actual methods of diagnosis such as DSM III. These tables are founded in part on the qualitative or quantitative *differences* between the behaviour or the personality structure of the patient and a society's behavioral standards; the individual is thus classified according to his *differences* in the sense of *deviance*. Social Psychiatry, which treats the problems of certain social epidemics caused by cultural shocks, intensive migration, social stress, racial violence..., will use the notion of *difference*, not only as a ***psychiatric indicator*** —and hence as a **consequence** from the diagnostic perspective— but as a **cause** of social conflict which could in its turn trigger off mental unbalance.

Through the phenomenon of progressive migration, the evolution of modern post-industrial society creates an ethnic dichotomy, which gives rise to a *variety of conflicting social codes* just as the development of a specialized technocracy gives rise to a *technological alienation* which creates a **restriction of *interactional and intersubjective references.***

This process leads to a sensible modification of **psycho-socio-cultural ecology,** where the notion of **difference** occupies a privileged place.

In this context, social psychiatry constitutes a scientific and humanist platform from which a more optimistic estimate and status of *difference* can be launched, according to which it constitutes an essential vector in the process of constructing the identity of the individual. The *differences*, therefore contribute to the intercultural enrichment of society: it is hence a question not of **classifying according to difference** —but of **respecting the differences that enrich identity.**

## Definition of the theme of the study

Our work is inspired precisely by this problem of intercultural diversity which unfortunately often provokes a profound *"feeling of psychocultural uprooting"*, giving rise to an **identity crisis**. This crisis represents **psychiatric risk.** The risk is analysed here essentially on the level of ***intellectual inhibition*** and *anticipatory anxiety.*

## Delimitation of the problem

Due to the excessive complexity of the multiple articulation mechanisms which enter into this process, we have decided to concentrate our approach on a **fundamental variable** which perfectly illustrates cultural shock and its influence on mental development. This variable is the **access to the world of the written sign** among the populations described as socioculturally *"underdeveloped"* (we use the term *"sign"* as it is employed in linguistic theory).

Among these populations the written language does not correspond to (immediately available) cognitive models which would permit the mental assimilation of written signs.

This problem concerns hundreds of millions of people, basically from Third World countries , who are or will be subject to massive literacy campaigns which threaten to provoke what LEROI-GOURHAN[7] calls the ***"linearization* of human thought".**

## Intellectual inhibition

Learning a new code of communication —as a mobilisator of the narcissistic structures which aid in the individual's capacity to understand and express himself —generates in many cases the **process of *intellectual inhibition.*** It is an active functional process which restricts and even sometimes blocks the manifestation of neurophysiological mechanisms, mechanisms which in other learning conditions function perfectly.

For example, if we recall the more developed *"neuropsychomotor"* functions of the *"disfavoured"* populations, we encounter functions such as the **"stereognosic structuration capacity",** a capacity which allows the individual to perceive and internalise the shapes of his environment through 3 **neuropsychosensory functions:**

i) **the sensory activity** of touch,
ii) **the kinesthetic proprioceptive activity** of movement,
iii) **the neo-cortical activity** of the motor image fed by neurophysiological schemes, like the "efference copy" and "corollary discharge" described by SPERRY[12] and VON HOLST & MITTELSTALDT.

These functions, developed within these populations by the "adaptability needs" based on the *"sciences du concret"*, following LEVI-STRAUSS's[8] terminology, play a leading role in the learning of writ-

ten language because they furnish a *concrete reference* to the *abstraction process* inherent to the written sign (MEYER, 1985)[10].

Thus, *in practice*, when we ask a blind-folded subject to recognize some kind of object, of pictographic shape ("sign-thing"/« *signe-chose* »), or even of ideographic shape ("sign-word"/« *signe-mot* ») from his own cultural environment which has been handed to him for a tactile analysis, he can identify it without difficulty.

When however, we ask the subject to identify, under the same conditions, some kind of alphabetic grapho-phonemic —shapes which he learnt to identify previously and whose graphic configurations are less complex than those of the ideograms presented to him in the first case— we observe that in a significant number of cases, the subject suffers perceptive and mnemic disturbances. The kinesthesic perception of the "graphic *significant*" abruptly degenerates. These disturbances are not explicable if we take the high level of development of the endogenous "stereognosic structuration capacity" that we see in these populations into account.

How can one explain that these disturbances are present on such a basic level of mental representation, as that which concerns the concept of *"primary percepts"*? This concept seems essential to the comprehension of the learning process and can be defined, according to CHANGEUX[2] by a mental object whose *"graph"* (stable neuronal network) and activities are determined by the sensory-motor interaction of the individual with his environment.

How does a neurophysiological mechanism so solidly "engrained" as the one responsible for the cortical *"engrammatization"* of the graphic shapes in question —through the peripheric proprioceptive information originating in spontaneous motricity— suddenly suffer a temporary dysfunction?

- Do the dopaminergic neurons of the brainstem selectively block the attention's control?
- Or does the acetylcholine, present for a few seconds in the synaptic transmission, prevent the opening of the ionic canal thus desensitizing the neurotransmitter's receptor?
- Could this synaptic desensitization at the *nerve-muscle junction* (KATZ[6]) be disturbing the proprioceptive mechanisms and consequently the creation of the *motor image* concerning graphic forms in the cortical somatesthesic centres?

Surely these neuromodulator phenomena —syncretically set out— fundamentally contribute to the above-mentioned confusion.

Nevertheless the only explanation which the hypothetical network of actual psychiatric nosology seems to make possible, lies in the *intellectual inhibition process*. According to this process even the most structured *neuropsychomotor* functions which are the basis of the cognitive style in a specific social group, will deteriorate in an intercultural conflict.

Even when this inhibitory process does not necessarily lead to very structured clinical tables, corresponding to nosographically defined pathologies, we ascertain an evident *reactive* and *selective psychiatric symptomathology*, in certain cases. It is to be found in such causes of learning disabilities as:

- weakness in the function of *voluntary or conducted attention*, associated with disorders of anchorage (suspended attention);
- slackening in the *"stream of thought"* and an increase *"reaction time"* which sometimes reaches the limits of *bradykinesia* and of *bradyphrenia;*
- *mental synthesis* carried out with difficulty using incomplete, fragmented and incoherent mnemic and perceptive data;
- compromised *"judgment and reflection faculties"*, sometimes caracterized by mental efforts which —when generalized in other realms of behaviour and coupled with an emotional discordance— could provoke a *"mental confusion" syndrome.*

The mental inhibition syndromes, characterized by *anxiogenic strain* accompanied by fatigue and cephalgy, *blocks* the individual's endeavour to indefinitly repeat his reading task.

"As though—AJURRIAGUERRA[1] tells us— the *other* or the *alter-ego* were to make a judgement on the subject's capacity to organize and carry out his task"...It is as if the individual found himself to be both the *judge* of and *witness* to his own inefficiency, thus reinforcing the *"narcissistic wound"*.

An original aspect of this approach to **intercultural psychiatry,** consists in its definition, founded in epistomological models which overstep the concept of the *"system of values"* to concentrate on the concept of **cognitive style.** This new approach will thus deal with the psychological mechanisms of perception and the analysis of physical, educational, social and cultural realities. Because it is only by way of these mechanisms that a culture's "system of values" can establish and develop itself.

In this context DANON-BOILEAU[4] and LAB's work attracts our attention to the impact of inhibition caused by physical, ecological and educative factors on the level of intellectual development and of psycho-affective equilibrium.

## Anticipatory Anxiety

Another *psychiatric symptomathology* observed by our study is constituted by *anticipatory anxiety.*

The social expectancy of "*literacy*" teachers, with regard to their students brings about an anticipatory anxiety in the latter, a phenomenon which manifests itself as a lack of self confidence, phobia of a new situation, submission, search for approval and sometimes fugue and "*scotomization*" (specific blindness).

The basis of this etiopathogeny lies in the difficulty of predicting the consequences of any action undertaken in the present.

For this population the written language constitutes a wall beyond which lurks an unknown and phobogenic world.

As we know the normal ***state of anticipation*** is made up by elements of **3 different orders:**

1. *Cognitive or logical*
   which concerns **intellectual principles and laws** according to which the individual develops his future *attitude* or *world view;*
2. *Neuropsychomotor*
   which concerns the **neurological, praxical and tonicopostural mechanisms** that enable the individual to develop his behaviour of "*preparatory adjustment to action*" (PAILLARD, 1971)[11];
3. *Psycho-affective*
   which concerns the ***dynamic* of the irrational and fantasy world**, generator of the energetic source, which the individual uses to build his "*anticipatory illusion*", fertile ground for the creation of a "*delayed symbolic universe*".

In these "disfavoured" populations we notice an ***anticipatory perturbation*** on these **3 levels:**

- On the ***cognitive level***—they ignore any kind of mental process which corresponds to a graphico-phonemical analysis of the written sign, and by extension to the *second order symbolism* which entails the mechanisms of the "*second articulation*" (MARTINET[9], 1969);
  They frequently do not understand that the sounds of their own language can be translated into graphic forms.
  They understand the phenomenon of "*painting of thought*" through pictograms and ideograms without the intervention of graphemes, but do not understand the phenomenon of the "*painting of the voice*" to borrow Voltaire's expression.
- On the *neuropsychomotor level*, they do not develop the *spatio-temporal* and *audio-visual capacities*, as well as the *motor images* which are in accordance with the **"linearity" of the phono-graphenic chain.**
- On the *psycho-affective level,* they rarely invest emotionally in the reality of written language, which has never been part of their physical and cultural usual habitat; consequently they have never had the occasion to develop a "*quantum of affect*" (FREUD, 1893), which might feed the mnemic trace of the mental representation of writing.

Hence we understand the complexity of intermingled neurological, psychological and cultural factors, which explain the difficulties these populations have with **anticipation.**

The ***problem of anticipation*** in our research corresponds to **3 essential factors:**

- **The absence of respect for rhythm and "*learning modalities*"** of a specific social group, for whom the written language constitutes a strange element whose *linear and timeless character* is difficultly conceivable by them. The learning creates a rupture of rhythm which disorganises the perception of future, an observation confirmed by DEMANGEON's[5] work .
- The **"*strangeness*" of the written sign** in the psychocultural system of illiterate people, for whom the *conventional and arbitrary character* of this sign is beyond their conception of reality.

  For these populations everything in the *reality* has a *reason for being*, which is authentiticated and legitimized by their *prescriptural and conventional "system of values"*. Chance, *a fortiori,* does not exist.
- **The high degree of "differentiation *significant/signified*" inherent to the written sign,** since these populations possess other strategies of symbolization, in which the degree of *iconicity* and resemblance between the *signified* and the *significant* is much superior.

  *For example*, we can evoke the "language of nature" the "mimo-posturo-gestural language" and also a "pictographic" and "ideogrammatic" one—all fundamental to these people of ***"science du concret"*** who are principally non-town-dwellers[10].

  In the **"language of nature"** which is basically founded on the **"notion of *indicators*"**, the *significant* is practically non-differentiated from the *signified.*

  Thus the foot-print of an animal on the soil constitutes an *indication (indicator)* of its pas-

sage; it keeps the exact imprint —or negative— of its foot. This language allows for a real *"reading of nature"*.

The **"mimo-posturo-gestural language"** is based on the **notion of symbol,** where the significant maintains a more indirect kinship relation with the *signified*, which is founded on a plurisecular system.

Thus the **body-language,** which is developed among these populations during their magical or religious ritual activities, mystical initiation, folkloristic dances, "mimo-posturo-gestural" activities of every day life... constitutes a series of *body-significants*, so structured, that they allow a proper reading of the body.

From this stand-point one can imagine the psycho-affective difficulties of these populations confronted by the high conventionality of the alphabetic sign. This sign constitutes an impenetrable universe before which anticipation creates a problem and creates anxiety.

When the future is dark, it is understandable that there is little attempt to *anticipate* a leap, whose landing could bring the individual to the loss of what COSTA e SILVA's[3] calls his "bio-psycho-socio-cosmic" identity.

The *anticipatory expectancy,* which can be a source of narcissistic gratification, thus changes into *anticipatory anxiety.*

In a parallel manner, SUTTER's work shows that a certain number of subjects have no problem rebuilding their past and harmoniously organise their present actions, but they reveal a pathological mental structure when anticipating their future.

## CONCLUSION

As a conclusion we will borrow D.M. LAWRENCE's metaphor which associates modern man of the tentacular post-industrial age with an "upside-down" tree, whose roots are in the air, projected into emptiness.

Social psychiatry in its vocation to reinstate the dialogue between ***scientific culture*** and ***humanistic and anthropological culture,*** now takes on the responsibility of replanting man's roots in a soil fertilized by the ***intercultural richness of difference.***

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# TABLE DES MATIERES





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