

## Innocent pain: the experience of pain in metaphysics, phenomenology and neurophilosophy

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**Abstract.** The concept of "innocent pain", which derives from theology, refers to those painful syndromes, afflicting the body or soul, for which it is not possible to pinpoint a precise material cause, with the result that the pain seems to occur "for no reason". This difficulty in identifying its origin prompts men, in their own experience and analysis of pain, to seize upon its universal meaning, as an affliction that affects, always and in any case, the whole of our being. In terms of biological research, it induces us to reflect upon the complexity of adaptive interactions between organism and environment, and on the growing distress in civilisation, whereby the increasing complexity of the world is matched by an adequate increase in the complexity of the body's response systems. From a clinical perspective, the effect of this interplay between extremes of complexity, pervaded by non-linear dynamics, manifests itself in certain critical aspects of headache syndromes, urging research to approach this pathology using more advanced models (open to the new epistemological scenarios offered by quantum neurology and by the study of behaviours of systems controlled by chaotic dynamics: Nappi and Milanesi's quantum migraine and Kernik and Goadsby's logic of chaos) with a view to the development of more effective and integrated treatment interventions.

**Key words.** pain, headache, non-linear dynamics, quantum neurology

### IL DOLORE INNOCENTE: L'ESPERIENZA DEL DOLORE IN METAFISICA, FENOMENOLOGIA E NEUROFILOSOFIA

**Riassunto.** Il concetto di "dolore innocente" - di derivazione teologica - si riferisce a quelle sindromi dolorose che affliggono il corpo o l'anima, per le quali non è possibile indicare una precisa causa materiale, per cui il dolore sembra manifestarsi "senza ragione". Questa difficoltà ad identificarne l'origine sospinge l'uomo a vivere e ad interrogarsi sulla esperienza del dolore cogliendolo nel suo significato universale, come una affezione che investe sempre e comunque la totalità del nostro essere. Sul fronte della ricerca in campo biologico induce a riflettere sulla complessità delle interazioni adattative organismo/ambiente, sul crescente "disagio della civiltà", per cui alla crescente complessità del mondo corrisponde una adeguata complessità degli apparati di risposta dell'organismo. Da un punto di vista clinico, l'effetto di questo gioco tra estremi complessi, pervaso da dinamiche non lineari, si manifesta in alcuni aspetti critici della sindrome cefalalgica, sollecitando la ricerca ad adottare modelli più avanzati di approccio a questa patologia (aperti ai nuovi scenari epistemologici offerti dalla neurologia quantistica e dallo studio dei comportamenti dei sistemi controllati da dinamiche caotiche: emicrania quantica di Nappi-Milanesi, logica del Chaos di Kernik e Goadsby) nella prospettiva di più efficaci ed integrati interventi sul piano terapeutico."

**Parole chiave:** dolore, cefalea, dinamiche non lineari, neurologia quantistica

### DOLOR INOCENTE: LA EXPERIENCIA DEL DOLOR EN METAFÍSICA, FENOMENOLOGÍA Y NEUROFILOSOFÍA

**Resumen.** El concepto de "dolor inocente" - de derivación teológica - se refiere a esos síndromes dolorosos que afligen al cuerpo o al alma, para lo cual no es posible indicar una causa material precisa, paradonde el dolor parece

manifestarse “sin razón”. Esta dificultad a identificar su origen empuja al hombre a vivir y cuestionarse en el experiencia del dolor atrapándolo en su significado universal, como un afecto que siempre invierte la totalidad de los nuestros ser. En el frente de la investigación biológica, induce a reflexionar sobre la complejidad de las interacciones adaptativas organismo / medio ambiente, en creciente “incomodidad de la civilización”, a lo que la creciente complejidad del mundo corresponde una complejidad adecuada del aparato de respuesta del organismo. Desde un punto de vista clínico, el efecto de este juego entre extremos complejos, impregnado de dinámicas no lineales, sí se manifiesta en algunos aspectos críticos del síndrome cefalálgico, instando a la investigación a adoptar modelos más avanzados de enfoque para esta patología (abierto a los nuevos escenarios epistemológicos ofrecidos por neurología cuántica y el estudio de los comportamientos del sistema controlado por dinámica caótica: migraña cuántica Nappi-Milanesi, lógica del Caos de Kernik y Goadsby) en la perspectiva de mas efectivo intervenciones integradas en el plan terapéutico.

**Palabras clave.** dolor, dolor de cabeza, dinámica no lineal, neurología cuántica

The concept of “innocent pain” was introduced into the metaphysical sphere to explore the mystery of the “evil” in the world, whereas in the sphere of the neurosciences it refers to idiopathic pain experiences. In migraine, as in other primary, non-symptomatic cephalalgias (such as tension-type headache, cluster headache/TACs and other central pain syndromes), we are confronted with cephalic or systemic pain spectrum syndromes in which the relationship (causal) between the “disease” and the aetiological agent is not immediately identifiable, in such a way that the pain, apparently occurs “without a reason” (*sine causa*).

After a historical excursus on the ontology of pain as mankind’s destiny (a biblical view) or as a (post-Renaissance) idea of pain as an individual, “medical” problem, the meaning of pain can be considered from an evolutionary perspective as a communicational interface between the internal (*milieu interieur*) and external environment (*habitat*).

Pain is a complex phenomenon which, having many categories of attributes, demands distinct levels of psycho-biological research. As an original biological phenomenon, pain is present at all levels of the evolutionary scale, but there is nevertheless something in Man’s way of experiencing pain that is not found in animals. In particular, in the longterm memory circuits of the human brain, pain becomes an “existential” experience, a question on the meaning of suffering (why did it happen to me?). Cases observed in psychiatric clinical practice, in particular, fall into this context, and range from the extremely broad field of psychalgia, panalgia, somatoform disturbances, chronic strain and

delusional headache, to the “pain of the soul”, which includes angst. This reference to angst leads us on to the concept of pain as a symptom of distress that is not provoked by an injured body part, but rather linked directly to the wounded whole. After all, physical pain, separated from its emotional dimension, loses its specifically human quality (this is the thinking behind leucotomy, yoga, transcendental meditation, and other Oriental techniques).

Looking at the phenomenological, neurophysiological and neuroanatomical bases of pain, we must focus, in particular, on issues linking the two main aspects of the origin of “pain consciousness”: the sensory and “evaluative” aspects, the stimulus and its contextualisation. Like, for example, a symphony, a scent, or a colour (all phenomena that belong to the “subjective” sphere, and which no physical instrument could ever record or consciously hear, see or smell), pain is today considered and studied as a *qualia* of consciousness – in the sense, of course, of phenomena belonging to Gerald M. Edelman’s “Second Nature”.

Pain, time, space. As well as external and/or internal stimuli (triggers), there also exist “mental stimuli”, evoked by memory. The pain of memory is not only the painful recollection of an event often forgotten, removed (and thus, for the consciousness, *sine causa*); it is also nostalgia, the pain that is caused by the simple passing of time, by the impossibility of going back (*nostos*), of reuniting, and which can also express itself in a spatial sense (pain projected outside the body, into extra-personal, even remote, distal spaces).

Pain as a metaphor. Pain symptoms can also be

considered the effects of a “conversion phenomenon”, that is, symptoms reflecting a physical response to moral or mental distress.

In this context, the body and parts of the body are thought to function as “organs of memory”, expressing, in the language of pain, a traumatic memory. Recollection is, by nature, a “synthesising” experience and single acts of recollection constitute an ongoing existence reinforcing process. Every memory, even the most innocent, contains a small element of suffering, distance and loss. In every act of recollection, the living system becomes a whole, even though it is having to acknowledge the renunciation of something that time has taken away. This is the pain we call “melancholy”. Chaos and migraine. The problems that arise when studying complex diseases like migraine and central pain phenomena (wherein the concept of sine causa is actually related more to the intervention of fractal, non-linear causality) are probably best explored through recourse to new, more sophisticated instruments of investigation, such as the theory of chaotic systems and fuzzy logic. In this new context, the meaning of pain alters and becomes part of a more complicated framework of exchanges: interactions between organisms that belong to the natural (physical) world and a series of factors relating to social and cultural models: habits, environment (geophysical) and lifestyle; epigenetic transmissibility (archetypal continuity), plasticity phenomena and new, more advanced hierarchies of values and behaviours.

Even though pain is, essentially, a “signal”, it has been studied very little from the perspective of the “theory of signals” (now part of the theory of chaotic systems). And the physics of chaos starts from the assumption that the more complex a system is, the less it can be understood using causalism-based approaches.

Although there is still not enough material to allow the construction of a “general theory of central pain”, there exists evidence that the genesis of migraine may derive in part from deficiencies of coherence between synchronised neural subsystems, in particular from a lack of coherence between the mesencephalic network, which is responsible for the integration of sensory inputs (lights, smells, sounds, expectations, etc.), and “inhibitory control filters”, which, through habituation processes, are responsible for reducing, adequately and in a synchronous manner, the overload

of environmental stimuli. The migraine attack is associated with a behavioural response whose effect is to reduce the level of sensory inputs; this leads to a reduction of the work of the sensory integration system, and in turn to resolution of the migraine attack.

In order to rise to the challenge presented by the concept of innocent pain, the neurosciences must be open to the indeterministic view of nature that has already been formulated scientifically in the sphere of contemporary physics. Taking as our starting point the moral (theological) concept of innocent pain, we have come to believe that at the “heart” of nature, there are very probably a great many more “innocent, chaotic, free processes” at work than deterministic, Newtonian science has thus far led us to believe.

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## Nota degli autori

Meanings of Pain è il più recente volume che rigetta il punto di vista tradizionale del dolore come fenomeno causato soltanto da danni tessutali alla base di percezioni nocicettive scatenate da processi neurali incoscienti. Al contrario, il dolore va visto come esperienza personale cosciente, che nell'uomo adulto normale si associa ad esperienze e risposte d'apprendimento, ripetute valutazioni comparative, emozionalità, vaglio e giudizio cognitivo

(S. van Rysewyk (ed), *Meanings of Pain*, Springer, 2016)