Mediterranean Journal of Clinical Psychology

ISSN 2282-1619

MJCP

Volume 12, n 3, 2024

Invited Editorial

On the biological basis for psychodynamic collective principles

Alessandro Sergi [1, 2]

[1] Department of Mathematical and Computer Sciences, Physical Sciences and Earth Sciences, University of Messina, Messina, Italy

[2] Institute of Systems Science, Durban University of Technology, Durban, South Africa

E-mail corresponding author: asergi@unime.it

Keywords:
Biological Basis of Psychology; Clinical Psychology; Complexity; Epistemology.

Received: 3 December 2024
Accepted: 27 December 2024
Published: 29 December 2024

Citation: Sergi, A. (2024). On the biological basis for psychodynamic collective principles. *Mediterranean Journal of Clinical Psychology 12*(3). https://doi.org/10.13129/2282-1619/mjcp-4574

Clinical psychology represents a complex science deriving from different forms of knowledge (Benjamin, 2023; Davey, 2021; Lo Coco et al., 2022). Its multidisciplinary roots and current directions are considered as a form of strength (Lilienfeld & Basterfield, 2020; Merlo & Myles, 2024; Myles, 2022; Ricciardi et al., 2023; Warner et al., 2016; Wertheimer & Puente, 2020).

Carl Gustav Jung is a giant in the history of psychology with a Janus characteristic. While his fieldwork belongs to the disciplines of psychology and clinical psychology (Brooke, 2015; Castonguay et al., 2021; Di Giuseppe & Lingiardi, 2023; Di Giuseppe et al., 2024), the psychological structures he recognized have a direct link to an ordering principle for phenomenological reality (Jung & Pauli, 1955; Sergi et al., 2024; Stein, 2019). Jung's Collective Unconscious is considered as a repository of symbols common to the psyche of all humans. According to its conceptualization, it exists beyond the individual mind, and, as such, it possesses a special ontological status (Gildersleeve, 2016).

Man's basic symbols come in antagonistic pairs. The source of all Archetypes is the "*speculum*": being, non-being (Guénon, 2001). These fundamental themes inspired the world of potentialities that Heisenberg (2007) devised to interpret the quantum mechanical world (Dirac, 1981; Pauli, 1980). Typically, quantum potentialities are statistically determined by the symmetries of the probability distributions of events (Meier, 2014; Pauli, 1980). Along this line

of thought, it was recently discussed how Synchronicity is not only an ordering principle for the psyche (Halpern, 2020; Jung, 1993) but also for both potential and actual realities (Jung & Pauli, 1955; Sergi et al., 2024). In this sense, Synchronicity is the bridge between the quantum world of potentialities (Heisenberg, 2007) and the set of classical events in a more general quantum-classical reality (Grimaldi et al., 2021; Grimaudo et al., 2023, 2024; Sergi et al., 2018, 2023a, 2023b).

The predominance of form over matter is not easily acceptable for the modern man (Guénon, 1953). Only hard science explanations are appreciated within a materialistic perspective, such as the one governing the contemporary age. The expectation is that human brain physiology is conserved (Bear et al., 2020; Kandel et al., 2000) by evolution so that the set of shared symbols the human mind can produce can be determined. Thus, the symbols of this set are predetermined and can be considered as a priori forms, i.e., the Archetypes. Such a line of thought was followed by Percival (1993).

The conjecture that Jungian psychological structures, *i.e.*, Collective Unconscious and Archetypes, are founded on the physiology of the brain is supported by the sciences of complex systems (Morin, 2022). Complexity does not possess an exact definition but depends on the observer. Certainly, Complexity is the science of studying complex systems. Cybernetics (Ashby, 2015), social sciences (Byrne & Callaghan, 2022), self-organization (Schweitzer, 1997), deterministic chaos (Cencini et al., 2009), disordered systems (Sollich et al., 2001), and artificial intelligence (Russell & Norvig, 1995) are examples of areas where complexity can appear when frustration and feedback (leading to unpredictability) appear. Morin based the definition of Complexity (Morin, 2022) on a series of features, such as the irreducibility of chance, singularity, nonlocality and temporality, complication/incalculability, complementarity of order and disorder, organization (holographic principle), the vagueness of the boundaries object-subject, organism-environment openness, and so on.

The observer's inescapability in complex systems implies that every form of knowledge must possess a degree of self-referentiality, instantiated by a model referring to the original knowledge. In Cybernetics, this idea is best clarified by the Good Regulator Theorem of Conant and Ashby (Conant & Ashby, 1970). In short, the theorem states that every good regulator must contain a model of the system. The image of this circularity in biology is found in the idea of autopoiesis elaborated by Maturana and Varela (Maturana & Varela, 1980, 1987). Autopoiesis originally explained how the living organisms's anabolic and catabolic activities are meant to maintain the organisms themselves. As condensed matter systems, the organisms are embedded in an environment which they interact with. If the organisms can model the environment efficiently, they can perform their autopoietic biochemical activities efficiently. The key point is

that for a complex system, parts of itself can alternatively become the environment, depending on the process. The conclusion is that there cannot be a net distinction between organism and environment. Once it is realized that the interaction of the model with the environment is what we commonly refer to as knowledge, the autopoietic nature of learning becomes apparent.

Maturana and Varela established the biological roots of epistemology (Maturana & Varela, 1980, 1987). Nowadays, such a biological epistemology is more commonly known as embodied mind (Merlo, 2024; Varela et al., 2017). The mighty of this concept is such that it has strongly touched even the foundations of mathematical thought (Lakoff, 2001). In the light of the epistemology of the embodied mind, the embodiment of Jungian Collective Unconscious and Archetypes follows by the biological root of the knowledge model common to all individuals of the human species. Percival's requirement (Percival, 1993) that evolution leaves such a model invariant is no longer required. The key point is that, at each time, there is a model shared among the individuals of the human species because of their current brain physiology. Hence, the Jungian Collective Unconscious and Archetypes must not be considered esoteric concepts outside of mainstream neuroscience (Bear et al., 2020; Kandel et al., 2000). In science, progress relies on asking the right questions. When stumbling stones are removed, the possibility for new questions naturally arises. The embodiment of the Collective Unconscious and Archetypes means that neuroscience can search for brain architectures in charge of correlations of ideas as it searches for areas of the brain related to the feeling of emotions and formulation of ideas. The fact that humans experience the same emotions points to a 'collective repository' of emotions for the human species, sustaining once again that the idea of a collective repository of symbols is not at all strange.

Conflict of Interest Statement

The author declares the absence of any potential conflict of interest.

References

1. Ashby, W. R. (2015). *An Introduction to Cybernetics*. Martino Fine Book, Eastford.
2. Bear, M., Connors, B., & Paradiso, M. A. (2020). *Neuroscience: exploring the brain, enhanced edition: exploring the brain*. Jones & Bartlett Learning.
3. Benjamin, L. T. Jr. (2023). *A brief history of modern psychology*. John Wiley & Sons.
4. Brooke, R. (2015). *Jung and phenomenology*. Routledge. https://doi.org/10.4324/9781315766690
5. Byrne, D., & Callaghan, G. (2022). *Complexity theory and the social sciences: The state of the art*. Routledge. https://doi.org/10.4324/9781003213574
6. Castonguay, L. G., Oltmanns, T. F., & Lott, A. P. (Eds.). (2021). *Psychopathology: From science to clinical practice*. Guilford Publications.
7. Cencini, M., Cecconi, F., & Vulpiani, A. (2009). *Chaos: From Simple Models to Complex Systems*. World Scientific, Singapore.
8. Conant, R. C., & Ashby, W. R. (1970). Every good regulator of a system must be a model of that system. *International journal of systems science*, *1*(2), 89-97. https://doi.org/10.1080/00207727008920220
9. Davey, G. C. (2021). *Psychopathology: Research, assessment and treatment in clinical psychology*. John Wiley & Sons.
10. Di Giuseppe, M., Aafjes-van Doorn, K., Békés, V., Gorman, B. S., Stukenberg, K., & Waldron, S. (2024). Therapists' defense use impacts their patients' defensive functioning: a systematic case study. *Research in Psychotherapy: Psychopathology, Process, and Outcome*, *27*(2). https://doi.org/10.4081/ripppo.2024.797
11. Di Giuseppe, M., & Lingiardi, V. (2023). From theory to practice: The need of restyling definitions and assessment methodologies of coping and defense mechanisms. *Clinical Psychology*, *30*(4), 393-395. https://doi.org/10.1037/cps0000145
12. Dirac, P. A. M. (1981). *The principles of quantum mechanics* (No. 27). Oxford university press.
13. Gildersleeve, M. (2016). The phenomenology and ontology of complexes. *Procedia-Social and Behavioral Sciences, 217*, 967-976. https://doi.org/10.1016/j.sbspro.2016.02.074
14. Grimaldi, A., Sergi, A., & Messina, A. (2021). Evolution of a non-Hermitian quantum single-molecule junction at constant temperature. *Entropy*, *23*(2), 147. https://doi.org/10.3390/e23020147
15. Grimaudo, R., Falci, G., Messina, A., Paladino, E., Sergi, A., Solano, E., & Valenti, D. (2024). Thermodynamic limit in the two-qubit quantum Rabi model with spin-spin coupling. *Physical Review Research 6*, 043298. https://doi.org/10.1103/PhysRevResearch.6.043298
16. Grimaudo, R., Messina, A., Nakazato, H., Sergi, A., & Valenti, D. (2023). Characterization of Quantum and Classical Critical Points for an Integrable Two-Qubit Spin–Boson Model. *Symmetry*, *15*(12), 2174. https://doi.org/10.3390/sym15122174
17. Guénon, R. (1953). *The Reign of Quantity and the Signs of Times*. Luzac, London.
18. Guénon, R. (2001). *The Multiple States of the Being*. Sophia Perennis.

19. Halpern, P. (2020). *Synchronicity*. New York.

20. Heisenberg, W. (2007). *Physics and philosophy: The revolution in modern science*. Harper, New York.

21. Jung, C. G. (1993). *Synchronicity: An acausal connecting principle*. Bollingen Foundation: Bollingen, Switzerland.

22. Jung, C. G., & Pauli, W. (1955). *The Interpretation of Nature and Psyche*. Pantheon Books, New York.

23. Kandel, E. R., Schwartz, J. H., Jessell, T. M., Siegelbaum, S., Hudspeth, A. J., & Mack, S. (Eds.). (2000). *Principles of neural science* (Vol. 4, pp. 1227-1246). New York: McGraw-Hill.

24. Lakoff, G. (2001). *Where Mathematics Come From: How The Embodied Mind Brings Mathematics Into Being*. Basic Books, New York.

25. Lilienfeld, S. O., & Basterfield, C. (2020). History of evidence-based practice. *In Oxford research encyclopedia of psychology*. https://doi.org/10.1093/acrefore/9780190236557.013.633

26. Lo Coco, G., Gullo, S., Albano, G., Brugnera, A., Flückiger, C., & Tasca, G. A. (2022). The alliance-outcome association in group interventions: A multilevel meta-analysis. *Journal of Consulting and Clinical Psychology*, *90*(6), 513. https://doi.org/10.1037/ccp0000735

27. Maturana, H. R., & Varela, F. J. (1980). *Autopoiesis and cognition: The realization of the living* (Vol. 42). Springer Science & Business Media. https://doi.org/10.1007/978-94-009-8947-4

28. Maturana, H. R., & Varela, F. J. (1987). *The tree of knowledge: The biological roots of human understanding*. New Science Library/Shambhala Publications.

29. Meier, C. A. (2014). *Atom and the Archetype: The Pauli/Jung Letters 1932-1958*. Princeton University Press, Princeton.

30. Merlo, E. M. (2024). Considerations on the Fundamental Relationship between Clinical Psychology and Epistemology. *Mediterranean Journal of Clinical Psychology*, *12*(1). https://doi.org/10.13129/2282-1619/mjcp-3965

31. Merlo, E. M., & Myles, L. A. M. (2024). Navigating the Multidisciplinary Landscape of Clinical Psychology. *Mediterranean Journal of Clinical Psychology 12*(2). https://doi.org/10.13129/2282-1619/mjcp-4275

32. Morin, E. (2022). *The Challenge of Complety: Essay by Edgard*. Liverpool University Press, Liverpool.

33. Myles, L. A. M. (2022). A Critical Evaluation of the Claim that the Amygdala's Primary Function in Social Perception is in Underpinning the Perception and Experience of Fear. *Mediterranean Journal of Clinical Psychology*, *10*(1). https://doi.org/10.13129/2282-1619/mjcp-3319

34. Pauli, W. (1980). *General Principles of Quantum Mechanics*. Springer, Berlin. https://doi.org/10.1007/978-3-642-61840-6

35. Percival, R. S. (1993). Is Jung's theory of archetypes compatible with neo-Darwinism and sociobiology?. *Journal of Social and Evolutionary Systems*, *16*(4), 459-487. https://doi.org/10.1016/1061-7361(93)90018-M

36. Ricciardi, L., Spatari, G., Vicario, C. M., Liotta, M., Cazzato, V., Gangemi, S., & Martino, G. (2023). Clinical Psychology and Clinical Immunology: is there a link between Alexithymia and severe Asthma?. *Mediterranean Journal of Clinical Psychology*, *11*(3). https://doi.org/10.13129/2282-1619/mjcp-3704

37. Russell, S., & Norvig, P. (1995). *Artificial Intelligence. A Modern Approach*. Liverpool University Press, Liverpool.

38. Schweitzer, F. (1997). *Self-Organization of Complex Structures: From Individual to Collective Dynamics*. CRC Press, Boca Raton.

39. Sergi, A., Giorgianni, C. M., Giacobello, M. L., & Martino, G. (2024). Synchronicity: An Unfinished Journey. *Mediterranean Journal of Clinical Psychology*, *12*(2). https://doi.org/10.13129/2282-1619/mjcp-4301

40. Sergi, A., Hanna, G., Grimaudo, R., & Messina, A. (2018). Quasi-Lie brackets and the breaking of time-translation symmetry for quantum systems embedded in classical baths. *Symmetry*, *10*(10), 518. https://doi.org/10.3390/sym10100518

41. Sergi, A., Lamberto, D., Migliore, A., & Messina, A. (2023a). Quantum–classical hybrid systems and Ehrenfest's Theorem. *Entropy*, *25*(4), 602.

42. Sergi, A., Messina, A., Vicario, C. M., & Martino, G. (2023b). A Quantum–Classical Model of Brain Dynamics. *Entropy*, *25*(4), 592. https://doi.org/10.3390/e25040592

43. Sollich, P., Coolen, A. C. C., Hughston, L. P., & Streater, R. F. (2001). *Disordered and Complex Systems*. American Institute of Physics, College Park.

44. Stein, M. (2019). What Is The Red Book for Analytical Psychology?. *Mediterranean Journal of Clinical Psychology, 7*(1). https://doi.org/10.6092/2282-1619/2019.7.2059

45. Varela, F. J., Thompson, E., & Rosch, E. (2017). *The Embodied Mind: Cognitive Science and Human Experience*. MIT, Boston. https://doi.org/10.7551/mitpress/9780262529365.001.0001

46. Warner, L. R., Settles, I. H., & Shields, S. A. (2016). Invited reflection: Intersectionality as an epistemological challenge to psychology. *Psychology of Women Quarterly, 40*(2), 171-176. https://doi.org/10.1177/0361684316641384

47. Wertheimer, M., & Puente, A. E. (2020). *A brief history of psychology*. Routledge. https://doi.org/10.4324/9781315269306

DOI: 10.13129/2282-1619/mjcp-4574