The Dawning of Computational Psychoanalysis: 
A Proposal for Some First Elementary Formalization Attempts

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ABSTRACT

In this paper, the author wishes first to highlight, within the general cultural context, some possible elementary computational psychoanalysis formalizations concerning Matte Blanco’s bi-logic components through certain very elementary mathematical tools and notions drawn from theoretical physics and algebra. Afterwards, on the basis of recent work of Giampaolo Sasso (1999; 2005; 2011), relying on the crucial crossroad between neurosciences and psychoanalysis, it will be possible to identify some hints for further formalization attempts turned toward a computational psychoanalysis outlook. Lastly, possible interesting relationships with cognitive informatics are also outlined.

Keywords: Bi-Logic, Bundle, Consciousness, Denotational Mathematics, Double Bind, Groupoid, Introjective and Projective Processes, Object Relationship, Oscillation, Resonance, Symmetry Breaking

1. INTRODUCTION

Ignacio Matte Blanco (1908-1995) was an outstanding psychiatrist and psychoanalyst who gave, among other things, notable contributions to the epistemological status of psychoanalysis starting from the Freudian theoretical framework. At the basis of his rigorous formulation of psychoanalytic foundations based on bi-logic, he put two main principles, namely the generalization principle and the symmetry principle. We refer to (Matte Blanco, 1975) for any further deepening of his thought. One of the central points of Matte Blanco thought is then the crucial transition from symmetric to asymmetric thinking. In this article, we want to make some formal remarks on the symmetry-asymmetry duality of Matte Blanco bi-logic, within the context of theoretical computational psychoanalysis. We think that Matte Blanco bi-logic is the most suitable one to be used for trying to employ a creative dimension from a computational standpoint, if one considers the unconscious as the main source of insight. Indeed, the basic inseparability

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between the symmetric logic and the asymmetric logic within the bi-logic context, might turn out to be useful just to this end. In this brief article, in particular, we would like to put into evidence some elementary formalizations which are offered as possible formal tools that may shed light upon the above mentioned link between symmetric and asymmetric logic. This is the chief point upon which we want to focus in the present paper. Within the general cultural context, we shall try to clarify Matte Blanco’s intertwining of symmetric and asymmetric logic by means of certain very elementary mathematical tools and notions drawn from theoretical physics and algebra.

2. THE BASES FOR A FORMALIZATION ATTEMPT

2.1. On Matte Blanco’s Bi-Logic: A Brief Review

The central point of Matte Blanco’s bi-logic is the inextricable intertwining of symmetric logic, which reigns in the unconscious realm and is mainly regulated by the generalization and symmetry principles, and the asymmetric logic, which rules conscious thought. We are mainly interested in the passage from the former to the latter, this being that process which, if appropriately formalized, may turn out to be of some usefulness from a computational viewpoint. In pursuing this, we follow a line of contextualization which includes some outstanding figures of the history of culture, amongst whom are Gregory Bateson, Claude Lévi-Strauss, André Weil and Robert R. Bush, as well as some elementary but basic formal tools and notions drawn from theoretical physics and algebra. Herein, we outline some main points of Matte Blanco’s thought, following (Figà-Talamanca Dore, 1978).

Matte Blanco’s work has been centred around the new and ambitious intention of analysing unconscious logic through rational thought. To do this, he put two main principles at the basis of his framework, the generalization and symmetry principles, which are able to explain the main characteristics of the Freudian unconscious, namely displacement, condensation, absence of time, replacement of the external reality with the internal one, and absence of contradiction. Matte Blanco’s work allows us to clarify the concept of consciousness. Starting from the paradigm of visual perception, based on the dual relationships between macular (or central) and peripheral vision, the focus on one object is perceivable only through a series of continuous eye pupil oscillations around it and not with a direct, fixed and central focusing on the object itself that will lead to an evanescence of the field of view. Analogously, consciousness, like eye movements, builds up asymmetric relationships around the object which is perceivable only through the latter, allowing to distinguish a thing from another. An object of consciousness is the result of a kind of bridling net of asymmetric relations built up around an emotional nucleus of symmetric relations. Consciousness, therefore, acts in an analytical manner, whereas general emotion, running symmetrically, acts in a global or synthetic manner. Nevertheless, both dimensions, or modes of being, are always inseparable and continuously interacting amongst each other. Psychoanalysis has pointed out the fundamental importance of emotion for the psychic life of every human being. The characters of consciousness may be detected only through introspection, which is an asymmetric phenomenon that concerns the time immediately prior to the introspection act itself. Hence, we may only have a retrospective introspection, because it is not possible to think something and, at the same time, to be aware of thinking. This is mainly due to the basic fact that, into the consciousness, not more than one asymmetric relation per time is presentable. Thus, the typical feature of rational thinking seems to be that of reflecting itself upon consciousness. In this sense, questions on psychological and physical time arise, reaching to touch philosophical issues concerning existentialism and phenomenology.
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