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Lysergic psychoma and mental automatism: a clinical exploration of synthetic psychosis

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Summary. The increasing prevalence of Novel Psychoactive Substances (NPS) presents a significant challenge for both diagnosis and treatment, particularly due to the complex psychotic states they can induce. This paper explores the concept of lysergic psychoma, rooted in Bonhoeffer's exogenous psychosis model, and its relevance to modern substance-induced psychoses. Lysergic psychoma, characterized by vivid hallucinations, delusional thinking, and somatoesthetic disturbances, represents a critical stage where temporary psychotic episodes risk evolving into chronic psychosis. This condition is closely linked with mental automatism, a phenomenon initially described by De Clérambault, where patients experience uncontrollable, parasitic thoughts and sensations that disrupt normal cognitive functions. The study underscores the importance of recognizing mental automatism in the progression of substance-induced psychosis, particularly as NPS use continues to rise. It challenges traditional distinctions between endogenous and exogenous psychosis, suggesting a more nuanced understanding of the interaction between genetic predisposition, environmental stressors, and the neurobiological impacts of psychoactive substances. This work calls for refined diagnostic criteria and targeted interventions to address the growing mental health crisis associated with NPS use. Emphasizing early intervention and prevention, particularly among adolescents, is critical in mitigating the risks of these emerging psychotic disorders. Integrating historical perspectives with contemporary research, this study offers new insights into the psychopathological processes underlying substance-induced psychoses, providing valuable frameworks for clinical practice and future research.

Key words. Exogenous psychosis, novel psychoactive substances, psychosis, substance misuse, schizophrenia, psychopatology.

Psicoma lisergico e automatismo mentale: un'esplorazione clinica della psicosi sintetica.

Riassunto. La crescente prevalenza di nuove sostanze psicoattive (NPS) rappresenta una sfida significativa sia per la diagnosi sia per il trattamento, in particolare a causa dei complessi stati psicotici che esse possono indurre. Questo articolo esplora il concetto di psicoma lisergico, radicato nel modello di psicosi esogena di Bonhoeffer, e la sua rilevanza per le moderne psicosi indotte da sostanze. Lo psicoma lisergico, caratterizzato da vivide allucinazioni, pensieri deliranti e disturbi somatoestetici, rappresenta una fase critica in cui episodi psicotici temporanei rischiano di evolvere in psicosi cronica. Questa condizione è strettamente collegata all'automatismo mentale, un fenomeno inizialmente descritto da De Clérambault, in cui i pazienti sperimentano pensieri e sensazioni incontrollabili e parassitarie che interrompono le normali funzioni cognitive. Lo studio sottolinea l'importanza di riconoscere l'automatismo mentale nella progressione della psicosi indotta da sostanze, in particolare poiché l'uso di NPS continua ad aumentare. Sfida le distinzioni tradizionali tra psicosi endogena ed esogena, suggerendo una comprensione più sfumata dell'interazione tra predisposizione genetica, fattori di stress ambientali e impatti neurobiologici delle sostanze psicoattive. Questo lavoro richiede criteri diagnostici raffinati e interventi mirati per affrontare la crescente crisi di salute mentale associata all'uso di NPS. L'enfasi sull'intervento precoce e sulla prevenzione, in particolare tra gli adolescenti, è fondamentale per mitigare i rischi di questi disturbi psicotici emergenti. Integrando prospettive storiche con la ricerca contemporanea, questo studio offre nuove intuizioni sui processi psicopatologici alla base delle psicosi indotte da sostanze, fornendo quadri preziosi per la pratica clinica e la ricerca futura.

Parole chiave. Abuso di sostanze, nuove sostanze psicoattive, psicopatologia, psicosi, psicosi esogena, schizofrenia.

Novel psychoactive substances and psychosis: a diagnostic challenge

The ongoing increase in psychoactive substances is a great social and medical emergency. Regulatory authorities often find it difficult to monitor the spread of these new substances, as they are freely available and quite cheap, especially on the Internet markets. In particular, adolescents are interested in them to induce altered states of consciousness and very often provoke extreme situations, which can lead to severe psychopathological conditions. Accordingly, SUDs are reported to be among the top 10 reasons for disability across the globe in 2010[1]. Sociologically, it has been postulated[2] that every society, with its norms and rules, creates a pattern through which

its members express their distress and success. In the present world, substance use has gotten itself deeply entwined with both of these aspects. For example, stimulant substances can be seen as a social reaction to the increasing demands of contemporary society, fostering a sense of 'empowerment' and reinforcing a feeling of narcissistic invulnerability. Within this perspective, substances turn into tools of self-care and self-medication in the drive to keep abreast with the fast pace of society, which often places one's personal relatedness in the background to make one efficient in social transactions, production, and pursuit of self-interests. From this perspective, substance use disorders, as well as their psychopathological correlates, represent reflections of the fluidity of life in contemporary society. In this sociological context, where immediacy becomes the driving force of individual life, there is a rapid spread of New Psychoactive Substances (NPS)[3-8] These can be classified into six main categories: synthetic cannabimimetics (like 'spice' and 'K2'), synthetic cathinones (like 'meow meow' and 'bath salts'), latest-generation phenethylamines/MDMA-like drugs (like 'fly' drugs, NBOMe derivatives, DMAA, and various indanes). The European Union (EU) has given an NPS a legal definition that says it is new narcotic or psychotropic substances which may be found in a pure state or in preparations that are not covered by the Single Convention on Narcotic Drugs of 1961 or the Convention on Psychotropic Substances of 1971[9].

However, new substances continue to emerge each year: more than 670 NPS have been reported in the EU, with 632 discovered since 2004[10]. Identification of these substances by health professionals is difficult, as reliable, evidence-based information is often lacking. The internet, including online forums, chat rooms, and blogs, has become one of the main sources of drug-related information and, consequently, approximately 61% of young Europeans aged 15-24 mention it as a main source[11]. On these forums, users share experiences, recommend sources, and administration methods. It is young, vulnerable people who are at the most danger of being ensnared by the strong marketing techniques of these vendors of NPS because of the exotic names, packaging in colourful covers, and provision of free samples. Nevertheless, there is no very good knowledge regarding the severe psychopathological consequences[12,13], and an almost absolute absence of regulatory controls except in contexts such as the prisons, where the use seems deliberate and widespread[14-16]. In addition, the consumption of these substances often does not occur under control, since they escape the usual tests on urine and blood. Increasing evidence is pointing to significant psychiatric and physical risks associated with the use of NPS. Initially, phenethylamines and tryptamines were the most common NPS, but in recent years, cathinones, synthetic cannabinoids (SC), phencyclidine, and benzofurans have gained popularity[17-19].

There is very limited and rather fragmented psychopathological understanding of the acute and chronic physical and psychological effects of NPS[20-24]. Most at risk for these substances are adolescents and young adults who misuse them with premorbid vulnerabilities. This usually leads to poor adherence to treatment programs, reduced effectiveness of psychiatric treatments, and further deterioration of symptoms[25]. NPS can disrupt a number of neurotransmitters, pathways, and receptors; for example, the dysregulation of dopamine in association with psychedelic phenethylamines and synthetic cathinones; activation of CB-1 receptors by synthetic cannabinoids; activation of 5-HT2A receptors with tryptamine derivatives and hallucinogenic plants; antagonism of NMDA and mGlu2/3 receptors with PCP-like substances; and activation of the kappa opioid receptor with *Salvia divinorum*.

Common clinical symptoms associated with NPS use are anxiety, dysphoria, increased aggression, mood lability, and perception and cognitive disturbances. The association of synthetic cannabinoids use and incidence of symptoms similar to schizophrenia has been recently brought to research light[26]. The study of psychosis experiences provoked by these drugs has also become the research focus over the last few years. In a two-year prospective naturalistic study, Drake et al. observed some significant clinical differences between substance-induced psychosis and primary psychosis. Their research revealed that visual hallucinations, suicidal ideation over the past 1-year period, violent behaviors, family history of substance use, and a higher level of insight into diagnosis were all reported more in the substance-induced psychosis group[27]. Another evidence included psychotic states in relation to methamphetamine, the MAP was expounded by further studies. Such states are marked by paranoid delusions and visual or auditory hallucinations, increased risk for relapse, and prolonged susceptibility to psychosis recurrences[28]. Paranoia generally escalates rapidly during methamphetamine use, and the severity of dependence and presence of antisocial personality disorder are predictive of methamphetamine-induced psychosis. The diagnostic process becomes particularly complex when substance use coexists with psychiatric conditions, complicating the differentiation between primary endogenous psychotic disorders and exogenous forms triggered by substance use[29-31]. Although the DSM-5 describes substance/medication-induced psychotic disorder as delusions and/or hallucinations that are likely attributed to the physiological effects of a substance or medication, according to evidence from history, physical examination, or labora-

tory findings[32], most clinicians have difficulty distinguishing the primary symptoms from those brought on by substance use. A major study in Scandinavia has attempted to address this issue at the level of a whole nation; it is estimated that every year, 6.5 cases per 100,000 develop substance-induced psychosis. In persons with long-term chronic substance use, SIP is higher[33]. Further, the study sought to understand mechanisms involved in such a state transition to persistent psychosis and it was established that rates of transitioning from SIP to schizophrenia spectrum disorders are sixfold increased when compared with those to bipolar disorder. Gender, age, frequency of emergency admissions, and type of SIPP are also contributing factors with effect on risk of transition. However, the debate has been over the specific indicators of a transition from exogenous, substance-induced psychosis to a persistent form resembling endogenous schizophrenia[34-37].

This is further complicated by evidence of the fact from literature, showing that 25-50% of SIP cases may develop into PPD, especially after cannabis-induced psychosis[38-42]. Interest in the psychopathologic manifestations induced by substances of abuse and an attempt to differentiate psychotic symptoms caused by substances of abuse from those resulting from endogenous psychosis date from early 1960s, correlated with the apparition of the first antipsychotics. Some investigators even performed self-experiments, diagnosing the exogenous psychosis symptoms and opening critical discussions about short- and long-term consequences of psychosis induced by substances. These trailblazing studies laid the groundwork for some of the main neurobiological hypotheses on schizophrenia: serotonergic model (LSD), dopamine hypothesis (amphetamines), and glutamatergic model (PCP, ketamine)[43-51]. A further stream of research is now directed towards endocannabinoids on the effects of cannabis[52-57].

In this paper, we aim to provide a fresh perspective on the emergence of new substance-induced psychoses. To this end, we will focus on two fundamental clinical aspects that are often overlooked: the reassessment of the diagnostic concept of exogenous psychosis as a condition characterized by psychosis induced by NPS; and the definition of "lysergic psychoma" as its foundational structure. This diagnosis has often been overshadowed by the dominance of the Kraepelinian-Bleulerian concept of endogenous psychosis but is now reemerging as a primary diagnosis in cases of substance-induced psychoses in recent years.

Mental automatism as a mechanism generating exogenous psychosis.

These aspects will aid in understanding this manifestation, offering clinical and diagnostic insights for clinicians, providing new reflections and knowledge as the number of affected patients continues to increase.

Lysergic psychoma in exogenous psychosis

The origins of the Exogenous Model of Psychosis and lysergic psychoma

The first psychiatrist to look deeply into the role of substances in altered states of consciousness was Jacques-Joseph Moreau de Tours, a pioneering figure in French psychiatry. He belonged to the earliest of those who did systematic inquiry into the effects of psychoactive substances on the human mind. In the 19th century, Moreau de Tours conducted a long series of experiments with diverse substances such as hashish to explore their impact on perception, thought, and mood[58]. This line of research opened the study of ways in which exogenous agents can produce altered mental states and remains at the core of studies about the theory of psychosis induction by exogenous substances. Moreau de Tours demonstrated that psychoactive drugs could give rise to something like psychosis, strongly supporting the idea that states of mind may be externally instigated, rather than emerging exclusively as a function of internal, endogenous factors. He stressed both internal and external influences in the development of psychotic disorders. Another major contribution to the description of exogenous psychosis was by Sigbert Ganser[59], who described twilight states or dissociative phenomena occurring in totally different settings not associated with psychotropic drug use. This closely resembled classical symptoms encountered in hysterical psychoses. The clinical picture arose under specific conditions, for example, in prisons. The development of such states resulted from chronic stress and trauma in life-threatening situations.

One of the principal figures in conceptualizing and systematizing exogenous psychoses was probably Karl Bonhoeffer[60], whose work laid the foundation for what Cargnello and Callieri would later define as the lysergic psychoma[43,44]. The concept of lysergic psychoma may be of some importance in understanding effects that are induced by Novel Psychoactive Substances not exclusively by lysergic hallucinogens. This term, introduced by Cargnello and Callieri in 1963, is essentially rooted in the concepts of both Hellpach and, above all, in Karl Bonhoeffer's hexogenic model. The term 'lysergic psychoma' is used to refer to a syndrome characterized by a fundamentally egodystonic experience in which the patient can perceive the presence of a 'foreign entity' in his mind. The Conscious Self, or Thinking Ego, experiences this and sees this as some very strange and uncontrollable experience involving visual and kinesthetic hallucinations with delusional perceptions

and some structured but encapsulated delusional thinking. All the time, the Ego tries to keep control and bind the psychoma. This experience is usually self-limiting, compatible with what is understood as an induced phenomenon, given the transitory pharmacodynamic effects of the substance. With repeated exposure, high doses, and possibly the very long-lasting pharmacokinetic properties of some new compounds, this may change. If continuous abnormal experience characterized by stability and repetition is imposed on the thinking Ego, it may weaken its resilience in facing the psychoma to be contained. But these strange ideas or deviant perceptions will become fixed and persistent when the neutralization ability is reduced, which will result in the psychoma invading the functional areas of the mind, leading perhaps to a full psychotic episode.

Bonhoeffer designated these psychoses as exogenous or hexogenic, and he directly pointed out an external agent that might influence the development of a psychotic condition. He noted this for the first time when, during his work in Breslau with patients suffering from alcoholism under Wernicke's guidance, he tried to trace down a hexogenic complex that would underlie a functional disturbance capable of colliding with an endogenous predisposition and possibly paving the way to a psychotic state. A few years later, at the University of Berlin, Bonhoeffer developed the idea of a hexogenic reaction, relatively uniform in structure, and induced from without by toxic, infectious, traumatic, or degenerative means. Among its characteristics was the presence of disturbed consciousness, which ranged from giddiness and states resembling dreams to delirium and stupor.

Bonhoeffer constructed his exogenous psychosis in opposition to Bleuler's concept of endogenous psychosis, which was evolving at the same time and was closely bound up with the term schizophrenia. Schizophrenia as formulated by Bleuler[61] carried within itself the concept of a 'prozes', in the sense of a progressive breakdown and loss of cognitive abilities – a concept very much inherited from Kraepelin. This concept of deterioration has also contributed to the debates on sterilization and euthanasia in psychiatric patients, ideologies endorsed by the Nazi party. Unlike the case of Bonhoeffer's hexogenic model, this one did not have a connotation of continual deterioration to worse states, and thus was not well accepted at that time. Bonhoeffer in 1938 declined to endorse the euthanasia policies meant for psychotic patients by the Nazi party. His model, free from the view of eventual descent into social uselessness, contributed to marginalization after he left the University of Berlin when it was assumed over by Max de Crinis. Although the endogenous model of psychosis, with the theoretical legacy of Kraepelin, continued to dominate German psychopathology, interest in the exogenous model was pursued in increasing parts of Europe like France, the UK, Scandinavia, and Italy. Bonhoeffer's relative neglect makes his work all the more valuable and deserving of further development, not least when considering how to understand psychoses that are chemically induced

Already in 1927, a student of K. Bonhoeffer, Kurt Beringer, clarified the concept of psychoma for mescaline and other lysergic substances[62]. These works contributed to an understanding of the mechanisms by which such substances can induce changes in consciousness and experiences similar to those occurring in psychoses. In Italy, in 1932, Giovanni Enrico Morselli self-experimented with mescaline and reported about its effects in several essays. In these writings, he thoroughly looked into the hexogenic model of psychoma vis-à-vis toxic phenomena. Morselli also conducted studies on the clinical effects of LSD in a group of volunteers, which included himself. He observed an extended syndrome with clear visual hallucinations, delusional perceptions, and paranoid ideation. Morselli commented on the likeness of such experiences to schizophrenia, lying within the fact that both conditions carry an altered perception of reality[45, 63-65].

Typologies and characteristics of lysergic psychoma

The lysergic psychoma is an exogenous clinical manifestation observed in users of various NPS, irrespective of the chemical class involved. The pharmacodynamics of the substance primarily dictate the nature of the abnormal phenomena. Substances that mainly affect serotonergic pathways often result in visual hallucinations with vivid, intense colors, often accompanied by strong emotional experiences, both positive and negative. Other common perceptual disturbances include kinesthetic and tactile hallucinations, whereas auditory, olfactory, and gustatory hallucinations are less common. Paranoid delusions, especially those with religious content, may occur, though fully developed systematic delusions are rare. Mood alterations towards hypomania can also be observed, alongside depressive symptoms and suicidal ideation.

Substances acting mainly on dopaminergic pathways are more likely to be associated with paranoid ideation and auditory hallucinations. Delusions of reference, persecution, grandeur, and jealousy, as well as hypomanic states, are commonly reported. Aggressiveness, irritability, dysphoria, anxiety, and panic episodes are also frequent. In contrast, substances that primarily affect glutamatergic pathways tend to induce dissociative reactions, such as derealization and somatopsychic depersonalization. Visual disturbances, typically in the form of distortions

and illusions, are common, along with bodily and kinesthetic hallucinations. Near-death experiences and delusions with somatic themes, such as Ekbon, Capgras, and Cotard syndromes, as well as beliefs in demonic possession, have also been reported. Negative psychotic symptoms, including mood flattening, affective blunting, anhedonia, and a general sense of detachment from the environment, are prevalent. Irritability and aggressiveness may be observed.

These various forms of psychoma – serotonergic, dopaminergic, and glutamatergic – are not distinct syndromes, as their symptoms frequently overlap. This overlap is due to the fact that some NPS affect multiple neurotransmitter pathways and because polyabuse is common. Nevertheless, distinguishing the clinical presentations can be valuable for developing appropriate therapeutic strategies. Among the different types of psychoma, the dopaminergic variant is most often associated with prolonged symptoms and a poorer prognosis, as seen in the case of methamphetamine-induced psychosis in Southeast Asia. Methamphetamine-induced psychosis is a severe form of paranoid schizophrenia, in which the psychoma has expanded far beyond its initial limits, leading to a deeply entrenched and persistent psychotic state.

Mental automatism, generator of exogenous psychoses

Gaëtan Gatian de Clérambault (1872-1934) was a notable French psychiatrist who made substantial contributions to psychiatry. Beginning his career in 1905, he worked at the Special Infirmary for the Insane within the Paris Prefecture of Police, where he eventually became the head of the institution from 1920 until his death in 1934. This facility, with its 18 cells, was designated for the temporary detention and psychiatric evaluation of individuals deemed potentially insane after arrest by the police. Annually, around 2,500 to 3,000 people were assessed there. De Clérambault was renowned for his capacity to make swift yet comprehensive clinical judgments, prioritizing the identification of key symptoms over merely assigning diagnoses. Throughout his career, he is estimated to have issued between 13,000 and 15,000 certificates.

In addition to his diagnostic responsibilities, Gaëtan Gatian de Clérambault was actively involved in teaching at the infirmary, particularly through public clinical demonstrations where he presented and discussed selected cases. His work on mental automatism began with a brief publication in 1909, and he continued to explore this concept throughout his career. His research on mental automatism culminated in recognition at the 1927 conference of Aliénistes et Neurologistes de France, where the significance of his contributions was widely acknowledged.

De Clérambault's first comprehensive examination of mental automatism took place in 1920, followed by several additional papers in the subsequent years. By 1925, he had defined mental automatism as «a clinical syndrome characterized by automatic phenomena in three domains: motor, sensory, and ideo-verbal»[66]. The term 'automatic phenomena' refers to unexpected events within the mind or body that the individual perceives as foreign or alien. In specific functional domains, such as motor, sensory, and ideo-verbal, the person experiences a passive submission to these intrusive elements, which are experienced as external interferences[67].

These automatic phenomena often initially evoke surprise due to their spontaneous and mechanical nature, yet they remain largely emotionally neutral and lack specific thematic content. The confusion and uncertainty they cause arise from disruptions in the normal thought process, leading to an inability to understand the events as they unfold. This bewilderment is not due to the particular mental content but rather to a fundamental disturbance in the formal structure of normal experience: «Mental automatism itself is not inherently hostile. Initially, the phenomena are emotionally neutral and lack thematic content»[68]. De Clérambault considered mental automatism to be a core process underlying various mental illnesses: «This syndrome encompasses all known types of hallucinations; however, the concept of mental automatism is broader than that of hallucination». While hallucinations are included, mental automatism refers to a broader interference process affecting motor, sensory-affective, or ideo-verbal functioning, often observed in the early stages of psychosis. Non-hallucinatory mental automatism typically precedes the onset of hallucinations, although both phenomena may coexist.

Within the overall interference process, de Clérambault identified two categories of automatic phenomena: positive and negative. Simply put, automatism can manifest as the introduction of new elements into one's functioning (positive mental automatism) or the deterioration of established elements (negative mental automatism). Positive automatism involves intrusive phenomena, while negative automatism involves inhibitory phenomena. Throughout his work, de Clérambault distinguished between minor and major automatism. Minor automatism refers to subtle positive and negative ideo-verbal phenomena that do not significantly impact the individual's subjective experience, often going unnoticed and remaining emotionally neutral. Major automatism, on the other hand, involves more significant disruptions in sensory-affective and motor functioning, leading to confusion and distress[66].

De Clérambault's approach diverged from traditional diagnostic systems, which primarily focused on specific symptoms like hallucinations and delusions. Instead, he adopted a broader descriptive approach, centering on mental automatism as a fundamental mechanism underlying various forms of psychosis. He argued that not all symptoms carried equal diagnostic weight, proposing that the presence of mental automatism was more indicative of psychosis than the presence of hallucinations or delusions alone[69-73]. According to his theory, patients who experienced hallucinations without automatic phenomena were not considered psychotic, whereas those who experienced automatic phenomena without traditional psychotic symptoms were[74-76].

In developing his theory of mental automatism, de Clérambault built upon the work of earlier French psychiatrists, particularly Jules Baillarger[77], who studied thought echoes and psychic hallucinations, and Jules Séglas[78], who researched verbal psychomotor hallucinations. However, de Clérambault's conceptualization of mental automatism was unique in that it grouped these phenomena with a wide range of other intrusive experiences, all of which he believed were rooted in similar neurological disturbances. He associated mental automatism with various types of psychoses, including paranoia, hypochondria, mania, melancholia, and hallucinatory psychoses, yet maintained a unified concept of psychosis, suggesting that similar automatic phenomena could give rise to different types of delusions depending on the context. Central to de Clérambault's theory was his belief that mental automatism had a direct correspondence with underlying neurological disturbances. He adhered to an organicist perspective, positing that mental automatism was a result of negative reactions to factors such as infections, intoxications, or tumors. He viewed automatism as following a mechanistic logic, suggesting that its origins must also be mechanical rather than psychological. Psychological explanations were dismissed by de Clérambault, as he found them implausible and inconsistent with the clinical observations.

In summary, de Clérambault's theory posits that mental automatism is the primary mechanism of psychosis, with other symptoms, such as delusions, emerging as secondary responses to the overwhelming automatic phenomena. Delusions, in this view, are cognitive attempts to make sense of the intense and strange sensations brought on by automatism. These delusional interpretations may eventually lead to the development of a "second" delusional personality. Between the initial onset of automatic phenomena and the formation of delusions, there is often an "incubation period" characterized by confusion due to conflicting thoughts and experiences.

De Clérambault's work emphasized the importance of recognizing and understanding mental automatism within the broader context of psychosis, particularly its non-sensory nature and its role in the development of psychotic symptoms. His insights continue to be relevant in clinical practice, as they highlight the structural nature of these phenomena and their potential to precede and contribute to the development of delusional thinking in psychotic disorders[68].

Mental automatism in the context of exogenous psychosis

At this point, two key reflections emerge. First, the theory of mental automatism, originally conceptualized as a general mechanism underlying the genesis of psychoses, can be effectively applied to understanding the development of substance-induced psychoses. Secondly, the progression toward chronicity in these cases might be driven by an initial biological lesion, triggered by external agents such as psychoactive substances.

For the first reflection, De Clérambault's pioneering work on Mental Automatism, conducted between 1920 and 1926[68-70], offered a comprehensive framework for understanding the origins of psychosis. His ideas about mental automatism and passivity, which had been somewhat overlooked in the European psychopathological tradition, highlighted the perception of uncontrollable and disconnected phenomena. These ideas prefigured what Schneider later termed "Gematch"[79], challenging existing notions of psychosis by emphasizing its organic and mechanistic underpinnings. De Clérambault's insights stemmed from his observations of thousands of individuals intoxicated by substances such as absinthe and alcohol, particularly in their acute phases, underscoring the biological foundation of these conditions. His observations revealed the intricate relationship between neurobiological processes and psychopathological manifestations. Moreover, De Clérambault's identification of a dissociative core as the underlying substrate for secondary psychopathological phenomena illuminated the intricate nature of psychiatric disorders. In this regard, De Clérambault is a successor to the Janetian tradition, which views dissociation as a multi-level deconstruction of consciousness, conceptually distinct from Bleuler's notion of *spaltung*[61]. This perspective challenged traditional dichotomies between endogenous and exogenous factors, advocating for a more comprehensive approach that accounts for the diverse influences on mental health.

Building upon De Clérambault's insights, Bonhoeffer emphasized the importance of a broader understanding of psychiatric disorders. He argued for moving beyond simplistic classifications to recognize the dynamic interplay between genetic predisposi-

tions, environmental stressors, and biological factors. This paradigm shift led to a reassessment of traditional diagnostic frameworks, urging clinicians to adopt a more holistic approach to psychiatric evaluation and treatment.

Regarding second reflection we are able to state that De Clérambault's concepts with contemporary understandings of substance-induced psychoses, such as lysergic psychoma, has expanded our understanding of the varied presentations of mental illness. Substance-induced psychoses are increasingly characterized as egodystonic experiences, often involving intense hallucinations and cognitive disruptions. This definition has allowed researchers to better grasp the interaction between pharmacodynamic effects and individual vulnerability. Clinically, psychotic episodes triggered by substance use often involve disturbances in cenesthesia and psychosensory experiences, with visual alterations being particularly prominent, especially in cases involving hallucinogens, dissociatives, or stimulants. The concept of lysergic psychoma is closely associated with mental automatism, as it generates unfamiliar phenomena that follow an automatic course, rendering the patient a passive observer of their experiences. During these psychotic processes, a twilight state characterized by vivid visual hallucinations and significant somatoesthetic phenomena frequently precedes the development of more complex forms of mental automatism, including ideo-verbal, sensory-perceptual, and motor disturbances. This progression eventually culminates in the emergence of delusional thinking, often with a paranoid nature, yet consistently intertwined with the individual's pre-existing personality traits. The delusion itself arises not as a revelation but as a confirmation deeply rooted in powerful sensory data. Initially, the productive aspect of these states remains egodystonic, with the patient observing themselves as though from a distance. However, as substance use becomes chronic and psychotic episodes recur, the ability to maintain critical self-awareness diminishes, leading to the onset of full-blown psychosis and the emergence of persistent psychosis with all the characteristics of chronicity, closely resembling endogenous psychosis.

Applying these clinical observations to a broader framework, it becomes evident that the initial symptoms in patients with toxic psychosis are predominantly sensory-perceptual. These symptoms are closely linked to the prolonged use of hallucinogenic, dissociative, or excitatory substances. During the twilight state induced by these substances[80-83] the narrowing of consciousness heightens the risk of illusory-hallucinatory misperceptions. This state acts like a lens, focusing attention on certain details and distorting them, leading to sensations such as itching, irritation, pain, and burning. Patients often attribute these intense sensations to a parasitic infestation, profoundly altering their cenesthetic experience. The combination of sensory irritation and a narrowed state of consciousness gives rise to a somatic passivity experience, which can be connected to mental automatism. The patient, while aware and critical, feels helpless as they witness the progression of the psychosis. Exploring the neural substrates involved in mental automatism can significantly enhance our understanding of its underlying mechanisms. Recent research highlights the importance of examining the neural circuits and brain regions associated with mental automatism to gain insights into its pathophysiology[84]. Neuroimaging techniques, such as functional MRI (fMRI) and PET scans, provide crucial information about the specific brain areas and neural pathways involved[85]. Key regions, including the prefrontal cortex and limbic system, are central to the manifestation of mental automatism, guiding the development of more precise diagnostic criteria and therapeutic interventions[86,87].

These brain regions play a critical role in processing sensory information and regulating emotions – functions often disrupted by psychostimulant substances. This disruption creates an initial subclinical irritation at the neurological interface, which over time becomes conscious and phenomenologically significant, manifesting in patients as delusional and hallucinatory structures[88].

Conclusions

This work highlights the complex interplay between psychoactive substances and the development of psychoses, particularly focusing on the role of mental automatism and the concept of lysergic psychoma within the framework of exogenous psychosis. As psychoactive substances, including NPS, become increasingly accessible, especially among adolescents, the risk of substance-induced psychoses grows, presenting significant challenges for both diagnosis and treatment.

The exploration of mental automatism, originally articulated by De Clérambault, provides crucial insights into the mechanisms underlying psychosis. His concept of uncontrollable, parasitic phenomena that disrupt normal cognitive and sensory functions resonates strongly with the experiences reported by individuals using hallucinogenic and dissociative substances. These automatic phenomena, which often present as vivid hallucinations, delusional perceptions, and a profound sense of dissociation, can overwhelm the individual's cognitive resilience, leading to the full development of psychosis.

The concept of lysergic psychoma, deeply rooted in Bonhoeffer's exogenous psychosis model, further

elucidates how repeated exposure to psychoactive substances can erode the mind's defenses, transforming temporary disturbances into persistent psychotic episodes. The psychoma represents a critical stage in the progression from transient substance-induced experiences to chronic psychosis, where the individual becomes a passive observer of their own mental deterioration.

By integrating historical perspectives with contemporary research, this work underscores the need for a more nuanced understanding of substance-induced psychoses. The distinctions between exogenous and endogenous psychosis, while historically significant, may need to be re-evaluated in light of new evidence that highlights the complex interactions between genetic predispositions, environmental factors, and the specific neurobiological impacts of substance use.

Future research should focus on refining diagnostic criteria for substance-induced psychoses, taking into account the unique features of mental automatism and psychoma. Additionally, there is a pressing need for targeted interventions that address both the immediate and long-term mental health needs of individuals at risk of or experiencing substance-induced psychosis. Preventive strategies, particularly among vulnerable populations such as adolescents, should emphasize the potential dangers of psychoactive substance use and provide support for early intervention.

In conclusion, the concepts of mental automatism and lysergic psychoma offer valuable frameworks for understanding the psychopathological processes at play in substance-induced psychoses. As the prevalence of psychoactive substance use continues to rise, these frameworks will be essential in guiding clinical practice and informing the development of effective treatment and prevention strategies.

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