

**DISCUSSION:** Our review of the literature demonstrates agreement in findings of traditional and contemporary assessment techniques of facial expressivity in schizophrenia. Our findings also demonstrate that current computer vision techniques have achieved capacity to differentiate schizophrenia from control populations and to predict psychometric scores. Nevertheless, the predictive accuracy of these technologies leaves room for growth. On analysis our group found two modifiable areas that may contribute to improving algorithm accuracy: assessment protocol and feature inclusion. Based on our review we recommend assessment of facial expressivity during a period of silence in addition to an assessment during a clinically structured interview utilizing emotionally evocative questions. Furthermore, where underfit is a problem we recommend progressive inclusion of features including action unit activation, intensity, action unit rate of onset and offset, clustering (including richness, distribution, and typicality), and congruence. Inclusion of each of these features may improve algorithm predictive accuracy.

**CONCLUSION:** We review current applications of computer vision in the assessment of facial expressions in schizophrenia. We present the results of current innovative works in the field and discuss areas for continued development.

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### Pareidolia as a Manifestation of Folie à Deux

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**ABSTRACT:** Introduction: The spreading of pareidolia, the visualization of one image inside another image, from one member of a couple to another one is seen in a subtype of folie à deux called folie imposée.

**CASE STUDY:** A 27 year old right handed male started having delusions two years prior to presentation. He experienced marked hallucinations in which he saw faces imbedded in clothing and demon-like faces that would appear in certain shades. During his visual hallucinations, “demonic-like angles would tell me how to get to heaven.” His pareidolia would be such that he would be looking at shadows on the walls or folds in clothing and see images within another. His fiancé, whom which he had been with for six years, also began to have pareidolia where she would be able to see facial images in furniture; for example, a chair would have an evil face or folds of

material would have a jagged, folded distortion. These persisted more prevalently when she was with him.

**RESULTS:** General physical examination: Hypopigmented skin. Mental Status Examination: Feelings of unreality, blunted affect, disorganized and pressured speech, flight of ideas. Thought process: abnormal with circumstantiality. Cranial Nerve Examination: Cranial Nerve 2: Visual acuity 20/70 OD, 20/50 OS. Retinal freckles OS. Cranial Nerve 3, 4, 6: bilateral tortuosity. Cranial Nerve 9, 10: deviated to right. Motor Examination: Drift test: right abductor digiti minimi sign. Cerebellar Examination: decrease amplitude to move left upper extremity. Finger to nose with dysmetria bilaterally. Reflexes: Brachioradialis: right 1+, left 3+. Biceps: right 1+, left 2+. Triceps: 2+ bilaterally. Knee Jerk: right: 2+ and pendular. Ankle Jerk: 3+ bilaterally.

**DISCUSSION:** Healthy pareidolia where images inside clouds or images of constellations and star formations is a zeitgeist of imagination which is more intense in some cultures than others. Folie à deux is a shared delusional disorder and folie imposée is a subtype when the dominant or principal person forms a delusion and imposes it onto the secondary or associate person. If folie imposée pareidolia is spread from one member of a couple to the other, it suggests that the second individual may be overly empathic to the first due to the dominating nature of the principal individual; the associate individual may be passive and submissive and thus accepting these visual perceptions more willingly. Alternatively, the associate individual could already have pareidolia of visual images which subliminally influenced the principal individual to have them, and can be misinterpreted as the opposite. In this patient, the dominant person had a multitude of different delusions but the delusion of pareidolia was the one which transferred to the associate. It is unclear as to why it was this that transferred as opposed to the other delusions and further investigation in this realm is warranted.

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### Case Report: Clinical Challenges in the Diagnoses and Management of Delirious Mania in a US Veteran with a Mental Health History of Bipolar Disorder

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**ABSTRACT:** A 46 year old Caucasian male veteran with a mental health history of Bipolar Disorder was admitted to the inpatient psychiatric unit following an episode of mania. He was re-started on his outpatient medication regimen for mood stabilization with Quetiapine, Lamotrigine, and Clonazepam. He improved initially, however, on hospital Day 3, the veteran was noted to have acute worsening of manic and psychotic symptoms including, decreased need for sleep, excess energy and responding to internal stimuli. Additionally, he developed symptoms which were atypical for mania, including unprovoked agitation, depersonalization, difficulty sustaining attention, and visual hallucinations. These mental status changes were associated with, excessive motor movement, walking with bizarre postures, squatting, laying taut on the ground, and standing still for several minutes in uncomfortable positions. At this time, Seroquel was switched with Olanzapine for management of mania and psychosis. On physical exam, his vital signs were notable for tachycardia and fever, his extremities were noted to have a normal range of motion; he also experienced loss of bowel continence. The treatment team initiated a medical work up for delirium which revealed no infectious, neurological, or metabolic cause. Of note, there was concern for benzodiazepine withdrawal; however, adequate management did not relieve the symptoms. The veteran was transferred to medicine and neurology was consulted to assist with medical workup. His neuroleptic and benzodiazepine medications were discontinued at that time, except for Lamotrigine. The veteran was then transferred back to psychiatry after medical stabilization, Lamotrigine was discontinued at that time. He was started on Haloperidol, Benzotropine and restarted on Clonazepam. At this time, veteran experienced improvement on his mental status exam, with resolution of mania, psychosis, and delirium. However, after two days of treatment, he developed acute rigidity in his extremities. Intramuscular Benzotropine and Lorazepam improved his rigidity. Haloperidol was discontinued because of side effects and the veteran was managed with Risperidone and Ativan. He continued to show improvement in his mental status examination and was discharged on a medication regimen of Risperidone, Clonazepam, and Benzotropine. The veteran experienced signs and symptoms which were atypical in nature for Bipolar Mania, such as fever, movement disorder, and delirium. This presentation is consistent with a rare medical condition, Delirious Mania for which limited research is available. Delirious mania meets the criteria for mania and delirium without an underlying medical disorder. Delirious mania is a potentially life threatening but under-recognized neuropsychiatric syndrome. Early recognition and aggressive treatment can significantly reduce morbidity and mortality.

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### “Lithium Damaged My Spine” Might not Be a Delusion After All

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**ABSTRACT:** Background: Lithium remains to be the drug of choice for treating BPAD for the past few decades. There is extensive literature showing the effectiveness of Lithium when used as a mood stabilizing agent in bipolar spectrum disorders. However significant number of articles show that a third of the patients who receive lithium for their symptomology not only do not show any response but also may show deterioration of their clinical symptoms. (However, research shows that Lithium may negatively affect a third of the patients depending on various factors). The side effect profile of Lithium and especially its neurotoxic effects were discussed in depth in literature over the last decade. Although Lithium remains first choice as maintenance treatment for bipolar affective disorder, about half of all individuals may stop their treatment at some point, despite its proven benefits concerning the prevention of severe affective episodes and suicide.

**METHODS:** The authors performed a systematic literature review to recognize the significance of negative effects of Lithium in a minority of patient population and also comment on the factors influencing patient compliance. We ran a literature search on Pubmed using the following terms: “Lithium” AND (“schizoaffective disorder [MeSH terms]” OR “Bipolar Affective disorder [MeSH terms]”). Our inclusion criteria were studies which have observed effects of Lithium in schizoaffective patient population or bipolar affective patient population. Studies with other concurrent diagnoses were excluded.

**CASE PRESENTATION:** We discuss a fifty nine year old male with a history of multiple admissions to a forensic hospital care setting. He initially endorsed a diagnosis of Psychotic disorder NOS which was later changed to schizoaffective disorder during his subsequent admissions. He presented with affective psychotic features where his mood was labile shifting from melancholic to euphoric and a concurrent history of auditory verbal hallucinations. He displayed paranoid non-bizarre persecutory delusions and also alleged that one of his