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Measuring the Orderliness of Thought

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Schizophrenia is a severe brain disorder characterized by disorganized thinking that can significantly interfere with the ability to function normally. Proper treatment is contingent on early detection. The Salient Items Test is a method devised by Dr. Michael Covington to detect the type of disorganized thinking that occurs in schizophrenia. Research shows that when asked to describe a picture, a patient with schizophrenia will often fail to mention all of the prominent objects (salient items) in it, whereas a healthy person will almost always produce a complete list. Dr. Covington is now investigating whether patients with schizophrenia, even when they name all the items, do so in a less orderly fashion than healthy people. My task involves development of a program in the C# programming language to implement a mathematical method for scoring the orderliness of picture descriptions. This program analyzes files of Comma Separated Values (CSV) to create distance matrices of the values. Distance matrices are used to reflect the order of the items in relation to each other. The distance matrices are then compared to a "normal matrix" to determine if there was a pattern or trend among patients with schizophrenia. The program is now being tested to assess its usefulness and accuracy. To test the program, artificial data representing orderly and disorderly picture descriptions will be constructed and scored. Once perfected, this program could allow for a faster and more accurate identification of schizophrenia patients.