IS OBSESSIVE-COMPULSIVE DISORDER A MATTER OF RUNNING MACROS? —1—

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Everyday when we come from job to home, we may directly go to bathroom and wash our hands. While doing this we may think what we lived today or going live that evening. Very few of us think how long we should wash it or still some germs are living on them. After a few minutes we feel confided that our hand are clean and stop washing our hands. All these procedure is a routine for us and mostly not planned consciously.

Much of our everyday social behavior is organized as routinized patterns of reactions that are mobilized in response to specific situations. Although learning and practice are required for the individual to be able to sequence many simple, innate actions into such response patterns, or "habits" are routinized, they are executed with little or conscious thought. These behavioral patterns have a spectrum from complex (e.g., touch typing while thinking only the thoughts) to simple (e.g., smiles, nods).

Social behavioral norms, whether they relate to hygiene, interpersonal aggression versus submission, or display of sexual behavior are examples of routines and pervasive in daily life. We responded to situations in one way or another with judging them with no or little conscious effort.

Baxter and his colleagues termed such behavioral routines as "macros" or complex sets of interrelated behaviors that must be precisely choreograp-

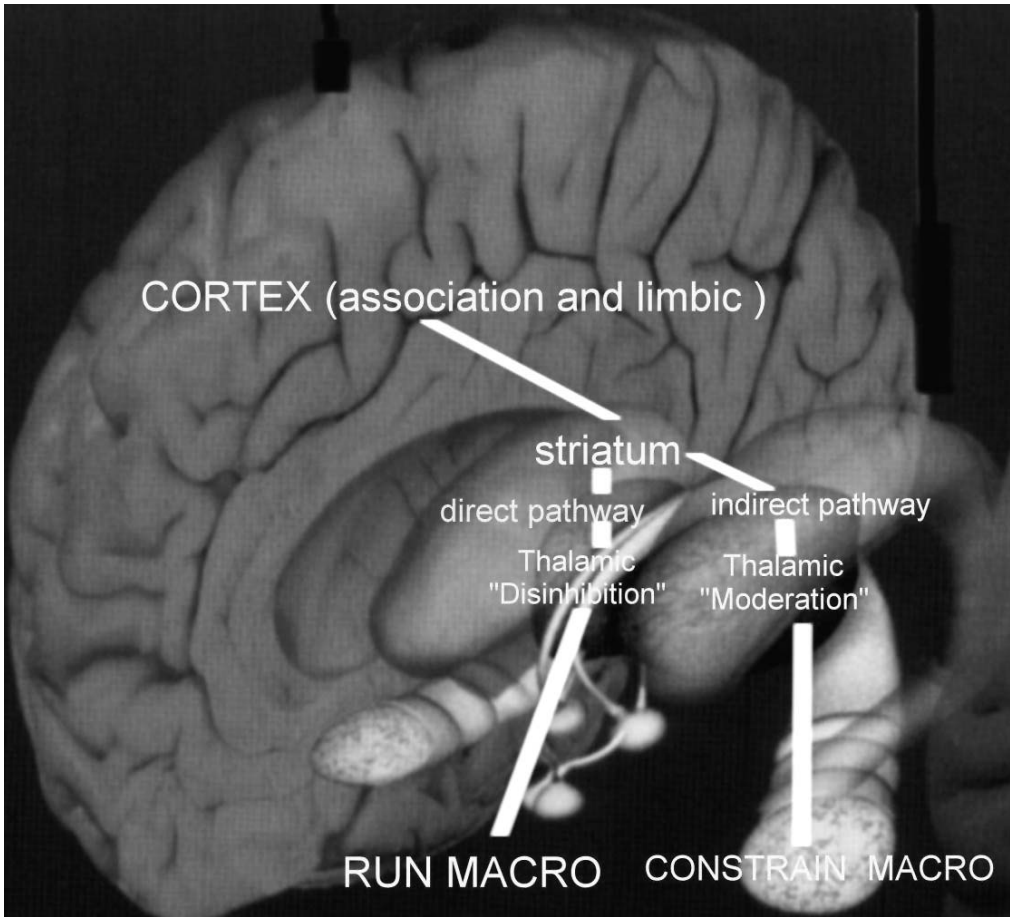

Figure 1: Cortical-basal ganglionic-thalamic system (thalamo-cortical pathways are omitted to make the figure to be simple)

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hed for semiautomatic implementation in specific situations to be effective. These behavioral macros are assembled from innate species specific response patterns that are packed to form appropriate macros through a process called implicit learning. These routine behaviors are one of the best examples of adaptation of human beings to survive in a world which may be highly dangerous for them.

This process, which entails the unconscious acquiring of habits and cognitive and motor routines, requires participation of basal ganglia in conjugation with ventral paralimbic prefrontal cortex and thalamus.

Cortical-basal ganglionic -thalamic system controls each macros to run or to stop. Impulses transmitted via the direct pathway would tend to activate the system, resulting in the release of behaviors, as opposed to activity traveling via indirect pathway, which tend to suppress the release. Such reciprocal actions may be involved in the initiation and cessation of behavior as necessary for adaptive function. Thus direct pathway initiates and sustains the behavior and indirect pathway halts it.

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