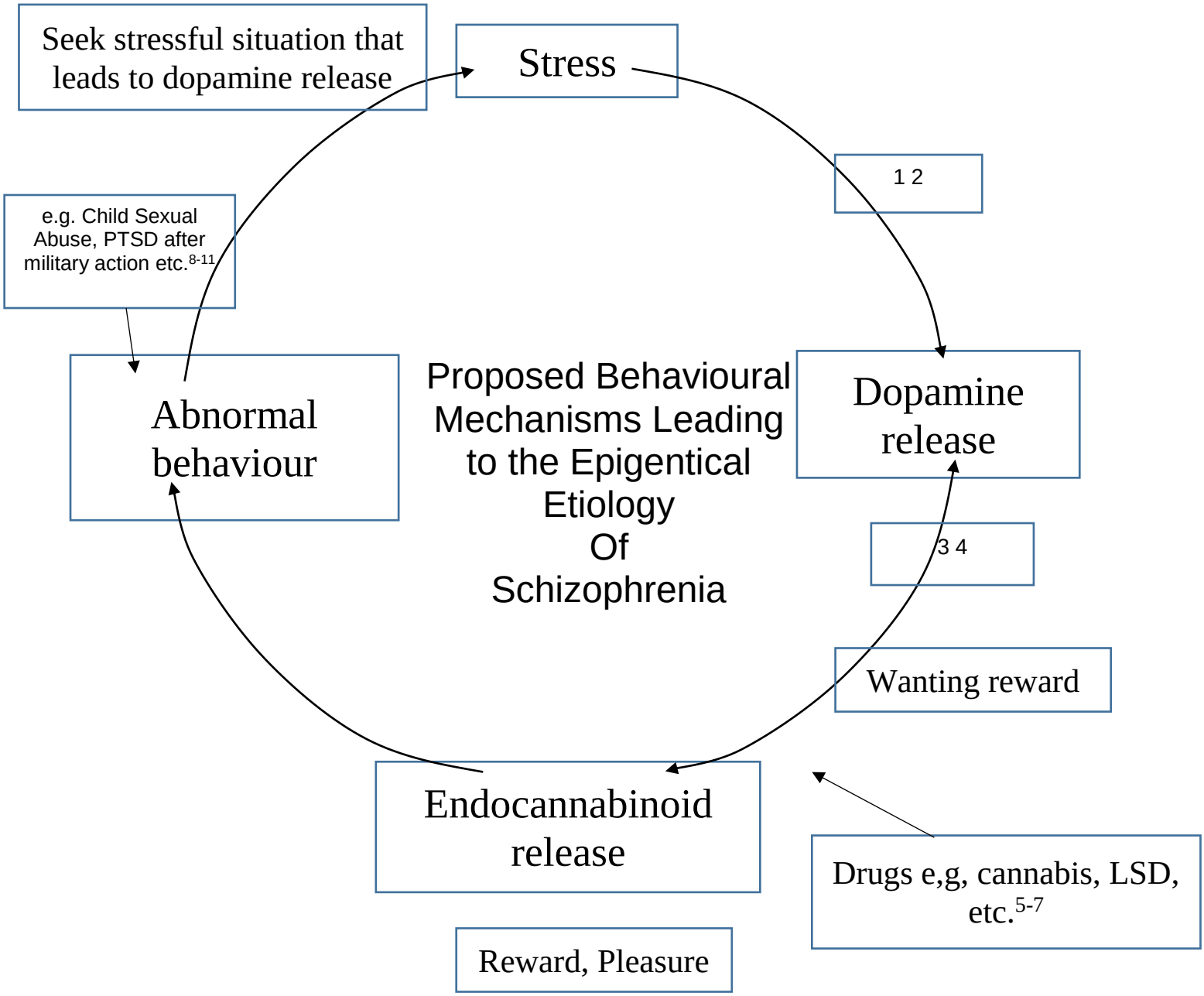
Diagram: Proposed behavioural mechanisms leading to epigenetically derived schizophrenia



Abnormal behaviour either imposed or voluntary leads to stress[11]. Abnormal behaviour can include child abuse (which can be sexual) imposed on the child by an adult[8]. Both the child and the adult may become stressed. Other imposed abnormal behaviour can include anything observed or actively involved leading to post traumatic stress disorder (PTSD)[9 10].

The stress caused by abnormal behaviour can lead to dopamine release[1 2]. Increased dopamine is thought to be a primary cause of schizophrenia[2]

Dopamine has been proposed to be a “wanting” neurotransmitter. Reward comes from the release of endocannabinoids[3 4]. These are released naturally but drugs such as cannabis, LSD etc. can provide this step taken exogenously[5-7].

This reward leads to (counter- intuitively) the need to seek the behaviour that provided the stress. This then becomes the start of a cycle of addictive behaviour which may lead to schizophrenia.

Schizophrenia may develop epigenetically as the control centre of the pre-frontal lobe of the cortex (PFC) is overruled in pursuit of the stress-induced dopamine release. Contact between the PFC and the amygdala through networks is diminished (through mechanisms including microglia activity). As the emotions involving the amygdala and other parts of the limbic system become more dominant the symptoms of schizophrenia may develop. As the disease becomes more serious neural networks and connectivity are increasingly broken down. Atrophy of the PFC and other parts of the cortex atrophy leading to cognitive impairment. The ventricles become enlarged as many parts of the brain atrophy.

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