CLAIMS

1. A system for enhancing artificial intelligence language models comprising:

a) a Neurotransmitter Simulation Module (NSM) configured to simulate dynamics of multiple neurotransmitters;

b) a State Interpreter configured to generate a multi-dimensional cognitive-emotional state vector based on analysing neurotransmitter levels;

c) an Adaptive Parameter Adjustment Module (APAM) configured to adjust language model parameters based on the cognitive-emotional state vector;

d) a language model configured to generate natural language outputs using the adjusted parameters; and

e) a feedback loop mechanism configured to evaluate quality of the natural language outputs and provide feedback signals as system feedback to the NSM and parameter feedback to the APAM.

2. The system of claim 1 further comprises a Dynamic Neurotransmitter Balancer configured to maintain balance among the multiple neurotransmitters.

3. The system of claim 1, wherein the multiple neurotransmitters comprise serotonin, dopamine, norepinephrine, acetylcholine, and gamma-aminobutyric acid (GABA).

4. The system of claim 1, wherein the State Interpreter comprises a neural network trained to map the neurotransmitter levels to generate the multi-dimensional cognitive-emotional state vector.

5. The system of claim 1, wherein the APAM comprises:

a) a rule-based component configured to make predefined adjustments of the language model parameters and

b) a machine learning component configured to make adaptive adjustments to the language model parameters.

6. The system of claim 1, further comprises an evaluation module configured to calculate a Contextual Appropriateness Score (CAS) to evaluate how well the natural language outputs align with a conversation context.

7. The system of claim 1 further comprises an evaluation module configured to calculate an Emotional Responsiveness Index (ERI) to evaluate emotional appropriateness of the natural language outputs.

8. The system of claim 1, wherein the language model is a transformer-based architecture, and the language model parameters comprise attention weights, temperature, and top-k sampling parameters.

9. A computer-implemented method for enhancing artificial intelligence language models comprising:

a) simulating dynamics of multiple neurotransmitters using a Neurotransmitter Simulation Module (NSM);

b) interpreting neurotransmitter levels to generate a multi-dimensional cognitive-emotional state vector using a State Interpreter;

c) adjusting language model parameters based on the cognitive-emotional state vector using an Adaptive Parameter Adjustment Module (APAM);

d) generating natural language outputs using a language model configured with the adjusted language model parameters; and

e) evaluating quality of the natural language outputs and providing feedback signals to as system feedback to the NSM and parameter feedback to the APAM using a feedback loop mechanism.

10. The method of claim 9, wherein simulating dynamics of the multiple neurotransmitters comprises:

a) modelling production rates of each neurotransmitter based on system state and environmental inputs;

b) modelling degradation rates of each neurotransmitter using Michaelis-Menten kinetics; and

c) modelling interactions between the multiple neurotransmitters.

11. The method of claim 9, wherein interpreting the neurotransmitter levels comprises using a neural network corresponding to the State Interpreter to map the neurotransmitter levels to the multi-dimensional cognitive-emotional state vector.

12. The method of claim 9 further comprises maintaining balance among the multiple neurotransmitters using a Dynamic Neurotransmitter Balancer.

13. The method of claim 12, wherein the Dynamic Neurotransmitter Balancer utilizes homeostatic mechanisms to adjust production rates and degradation rates corresponding to the multiple neurotransmitters.

14. The method of claim 9, wherein adjusting the language model parameters comprises:

a) mapping the multi-dimensional cognitive-emotional state vector to specific parameter adjustments; and

b) applying the parameter adjustments to the language model.

15. The method of claim 9 further comprises calculating a Neurochemical Stability Index (NSI) to quantify stability of the multiple neurotransmitters over time.

16. The method of claim 9 further comprises calculating a Cognitive State Consistency (CSC) score to assess consistency of the multi-dimensional cognitive-emotional state vector over time.

17. The method of claim 9, further comprises calculating an Adaptive Response Efficiency (ARE) score to quantify efficiency of the natural language outputs in response to environmental changes.

18. The method of claim 9, wherein simulating dynamics of the multiple neurotransmitters comprises using stochastic differential equations to model biological variability.

19. The method of claim 9 further comprises adjusting a learning rate of the language model based on the neurotransmitter levels to modulate system plasticity in response to new information.

20. A computer program product for enhancing artificial intelligence language models, the computer program product comprising a computer-readable storage medium having program instructions stored thereon; wherein the program instructions, when executed by a processor, cause the processor to perform the method of claim 9.