**3. Modeling of Artificial Emotions and Its Application towards a**

**Healthy Environment**

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# ABSTRACT

Thischapter proposes modeling of artificial emotions through agents based on the symbolic approach. Two models were built for agent-based systems; one was supported with artificial emotions and the other one without. Both were used in solving a benchmark problem: orphanage care. The goal was to have a clean and healthy environment for an orphanage house. An application symbolic approach utilizes symbolic emotional rule-based systems (i.e. rule base that generates emotions) with continuous interactions with the environment and an internal “thinking” machinery that comes as a result of a series of inferences, evaluations, evolution processes, adaptations, learning and emotions. The two systems were simulated and results were compared. The study showed that systems with proper model of emotions could perform better than systems without emotions. The study sheds the light on how artificial emotions can be modeled in simple rule-based agent systems, and if emotions as they exist in real intelligence can be helpful for artificial intelligence.