# Emotional Agents

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1. **The EM emotion Architecture:**



Figure : The EM Architecture

* 1. *Inputs to the Emotion Generation Rules:*
* **Sense Data & Sensory Memory –** Sense data provide important information such as who and what is nearby, what other agents are doing, and what is happening in the environment.
* **Goals, Standards & Attitudes –** Goals can be either active (actively pursued, like eating) or passive(goals that agent want to achieve but the agent does not pursue it, like a fan wanting his team to win).
* **Body State –** Agents facial expression, state of physical arousal, and muscular state that are available to the emotion generation system.
* **Social Relationships –** Relationships with other agents in the environment.
* **Models of Other Agents –** Behavioral models of other agents in the agent.
* **Goal Processing Information –** EM has access to information about goal creations, goal successess, goal failures, the likelihood of goals succeeding, the likelihood of goals failing., changes in either likelihood value, the parties responsible for a goal succeeding or becoming more likely to succeed, the parties responsible for a goal failing or becoming more likely to fail, the sources of threats to goals, possible sources of assistance for goals, and plan failures.
* **Emotion Structures –** The emotion system feeds back on itself, so that previously generated emotion structures can affect the generation of new structures.
  1. *Default Emotion Generators:*

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| **Emotion type** | **Cause in Default EM system** |
| Distress | Goal fails or becomes more likely to fail and it is important to the agent that the goals not fail. |
| Joy | Goal succeeds or becomes more likely to succeed and it is important to the agent that the goals succeed. |
| Fear | Agent believes a goal is likely to fail and it is important to the agent that the goals succeed. |
| Hope | Agent believes a goal is likely to succeed and it is important to the agent that the goal succeeds. |
| Satisfaction | A goal succeeds that the agent hoped would succeed. |
| Fears-Confirmed | A goal fails that the agent feared would fail. |
| Disappointment | A goal fails that the agent hoped would succeed. |
| Relief | A goal succeeds that the agent feared would fail. |
| Happy-for | A liked other agent is happy. |
| Pity | A liked other agent is sad. |
| Gloating | A disliked other agent is sad. |
| Resentment | A disliked other agent is happy. |
| Like | Agent is near or thinking about a liked object or agent. |
| Dislike | Agent is near or thinking about a disliked object or agent. |

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| **Emotion Type** | **Cause in Default EM System** |
| *Other attitude-based emotions* | *Agent is near or thinking about an object or agent that the agent has an attitude towards (e.g. awe)* |
| Pride | Agent performs an action that meets a standard of behavior. |
| Shame | Agent performs an action that breaks a standard of behavior. |
| Admiration | Another agent performs an action that meets a standard of behavior. |
| Reproach | Another agent performs an action that breaks a standard of behavior. |
| Anger | Another agent responsible for a goal failing or becoming more likely to fail and it is important that the goal not fail. |
| Remorse | An agent is responsible for one of its own goals failing or becoming more likely to fail and it is important for the agent that the goal not fail. |
| Gratitude | Another agent is responsible for a goal succeeding or becoming more likely to succeed and it is important that the goal succeed. |
| Gratification | An agent is responsible for one of its own goals succeeding or becoming more likely to succeed and it is important to the agent that the goal succeed. |
| Frustration | A plan or behavior of the agent fails. |
| Startle | A loud noise is heard. |

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