Synthetic Personality in Robots and its Effect on Human-Robot Relationship

Shelly Park¹, Ehud Sharlin¹, Yoshifumi Kitamura²
1. Interactions Lab, Department of Computer Science, University of Calgary, Calgary, AB, Canada, T2N 1N4
2. Human Interface Eng. Lab, Osaka University, Suita, Osaka, Japan

1. Goal
By implementing a playful and fearful dog behaviors in a robot dog, attempt to create a more believable robot dog and evaluate the reactions and responses from humans.

2. Robotic Emotions
Synthetic emotions can help robots operate in an ever-changing world and interact effectively with humans.

Synthetic emotions are a programmable set of communicative and sociological behaviors associated with emotional patterns. They can enhance a robotic interface so it will be perceived by humans as eliciting emotions.

3. Tools
We propose to employ Sony’s Aibo ERS-7M2/B robot dog, using the R-CODE to design and program the robot’s behavior.

4. Implementation: Basic Sequence of Emotions
- **Playful state:** Imitate a playful dog by wagging its tail and barking happily to draw people’s attention.
- **Fearful state:** Characterized by growling, crying frighteningly and barking. Back away from the audience but still seek some comfort from the audience.

5. Evaluation
Place Aibo in a crowded environment, on leash, much like a lost puppy.
Aibo will follow one of the two emotional states. Monitoring the test sites will be done via video camera.
Find out people’s reaction of synthetic emotions: good, bad or indifference.

6. Conclusion
Address future robot designs such as colors and shapes.
Determine necessary behaviors required of robots in asking for help in a large crowd.
Determine a set of synthetic emotions that will improve its usability and survivability.