

NAO robot at the “Paese Ritrovato”, the Recovered Village

Interview with Dr. Paola Perfetti on the activities carried out with the NAO robot at the “Paese Ritrovato”. NAO robot is a humanoid “in service” at the “Paese Ritrovato”, thanks to a project of the Cooperativa La Meridiana, co-financed by the Bank of Italy, and carried out in collaboration with Scuola Robotica.

The “Paese Ritrovato” is a real village - located in Monza, Italy, founded and managed by La Meridiana -, which houses people with Alzheimer's disease. It covers an area intended for residence of 3,360 square meters with an area used for stores and places of aggregation, with streets, squares, gardens, stores, the theater, the church, the pro loco, and the garden.

NAO robot is used by the operators of the “Paese Ritrovato” in activities of edutainment, play and cognitive support.

Dr. Perfetti is a drama therapist at La Meridiana, and the “Paese Ritrovato”.

We asked her to talk about how the residents of the “Paese Ritrovato” have accepted and welcomed NAO robot and the play and learning sessions with NAO.

Below is the text of the interview with Dr. Perfetti.

The activity

The workshops with NAO robot were carried out in two of the apartments of *Paese Ritrovato*, *Betulla*, *Birch*, and *Faggio*, *Beech*, and were conducted alternately by Dr. Marco Fumagalli, educator, and myself.

In the *Birch* house there is a group of very lively, positive elderly residents; we can now describe them as a company, a group of friends, so close-knit are they. They are curious, participative, attentive to new things. They respond to new input with attention and consistency.

The group of residents in the *Beech* house constitute a more heterogeneous group with different cognitive profiles, with lower characteristic as a team. They are quite different from each other, which is why stimuli/activities are most often individualized.

They are two different groups, and this has been important in understanding our guests' response to the same stimulus.

Since a few weeks, starting in January 2021, we have done several trials with NAO robot, a greater number in the *Birch* house since we started there, and we must say that from the first approach the strongest feeling expressed by the guests was wonder.

On the whole we can say that the reaction has been positive, sometimes of enthusiasm, the guests are fascinated, we could say, touched.

Of course, each guest reacts according to their own personality.

Guests are intrigued from the moment NAO is turned on; when the robot begins to stand up, and they watch it with interest.

The moment the robot begins to interact, the guests' curiosity is even more aroused and they begin to ask and activate their imagination. We were struck by the fact that guests in front of NAO tend to imagine, to tell stories about the robot: *Who is it? Where does it come from? What is its story?*

They also desire his interest, compliment him, expect compliments.

From this point of view, the *Knowledge* scenario was the most appreciated. As will be seen from the completed Questionnaires, the Knowledge scenario is the most selected.

The activity with NAO lasts about half an hour each time.

A subject, a real character

Guests see NAO robot as a high-tech, sophisticated, interesting subject.

For us, “normal” people, digital technology is of daily use; for our residents, also taking into account their age, it is a surprising encounter.

The approach towards NAO is tender, surprised, and among the comments we collected:

- it is so particular
- interesting
- How did they build it?
- Is it possible for a machine to talk to me?
- How does such advanced technology work?

They see it as a boy, partly because it’s called NAO, with a final *o*, partly because it’s technological.

They are very intrigued, asking how much it costs, how it’s made, who made it.

The residents’ personalities influence their answers, which range from “Will you marry me?” to “How much does it cost?”.

They all follow the unfolding of the pilot laboratory carefully, and ask many questions of the facilitator, us operators, Marco Fumagalli and I, who do educational activities, drama therapy and role-playing.

Residents are also very interested in NAO’s story, so when there are Scenarios in which NAO talks about his girlfriend, or his dog, his recipes, the residents want to know more, intrigued by his life and habits.

NAO’s tinny voice, which initially seemed like a problem to us, is liked and even imitated because it is funny.

Some guests would like to protect NAO, who sometimes sits, rocks, and seems to fall over. Someone else physically seeks contact with the robot, takes its hand, caresses it, they would like to shorten the distance.

Residents often “tell NAO’s story”, with interesting emotional mirroring: when NAO doesn’t respond, they don’t say “The robot doesn’t work”, they say “It doesn’t want to answer me, it’s spiteful”. They humanize it. It’s not the robot not working, “it’s the robot not wanting to”. This is important because we were afraid that in the case of malfunctions the guests would get weird. Instead, they step in and tell us what’s going on.

The fact that the robot turns its face and follows voices helps us, because the participants feel like they are being watched, and they express it: “NAO is looking at me”. For the guests, all of NAO’s gestures have meaning, and are interpreted. This is important to us, not only because of the

storytelling activity that is ignited, but also because of the possibility of increased guest understanding of the gesture.

Reactivation

This was a very interesting one. To my question, How did they feel after the activity with NAO, everyone responded:

- more active
- in a good mood
- cheerful

A few told me they wished the activity would have continued. One lady, whom we met on the day of the activity with NAO, on Wednesday, asked, “Where is NAO?”, missing it, or sensing a habit.

On the chalkboard in the common space of the houses we placed a sign, Wednesday, March 3, 4 pm, activity with NAO.

We are trying to create the expectation of the moment with NAO, which is seen as cheerful, fun.

Even those who didn’t remember the session the second time, by the third time they remembered. When I said NAO, they responded, “the robot”. In fact, the one with NAO is not just a cognitive session, but a relationship session, with the operator and the robot, and for that reason more empathetic.

One of the residents told his visiting daughter about NAO. The fact that they tell relatives about their experience is a good indicator.

Some residents said, “I would like NAO twice a week”, and another, “No, every other week is fine”, and that means they have a sense of time here, and when they would like the activity.

Another notable aspect is that residents respond thoughtfully and consistently to the scenarios. They respond to the one on Animals, and they conclude and sentences on Proverbs.

The Agility test, which seemed to us to be the most difficult, is instead enjoyed, but more than imitating NAO’s movements; they enjoy watching him continue to interact. When NAO imitates flight, they ask him, Where are you going?

This suggests that they are interested in NAO as a character, whose actions, life, and history they would like to know.

The Songs Scenario is liked, not only do they guess the song titles, but they sing along with the robot. The Recipes Scenario is liked, they exchange recipes with NAO.

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