Caring for Agents and Agents that Care: Building Empathic Relations with Synthetic Agents

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Abstract

When building agents and synthetic characters, and in order to achieve believability, we must consider the emotional relations established between users and characters, that is, we must consider the issue of "empathy". Defined in broad terms as "An observer reacting emotionally because he perceives that another is experiencing or about to experience an emotion", empathy is an important element to consider in the creation of relations between humans and agents. In this paper we will focus on the role of empathy in the construction of synthetic characters, providing some requirements for such construction and illustrating the presented concepts with a specific system called FearNot!. FearNot! was developed to address the difficult and often devastating problem of bullying in schools. By using role playing and empathic synthetic characters in a 3D environment, FearNot! allows children from 8 to 12 to experience a virtual scenario where they can witness (in a third-person perspective) bullying situations. To build empathy into FearNot! we have considered the following components: agent's architecture; the characters' embodiment and emotional expression; proximity with the user and emotionally charged situations. We will describe how these were implemented in FearNot! and report on the preliminary results we have with it.

1. Introduction

Synthetic characters are becoming more and more commonplace in human computer interaction. Ranging from different application areas, such as computer games, e-commerce or virtual storytelling, synthetic characters are now moving from the purely academic research into the commercial world. This growth is certainly associated with the need to enrich the communication between people and computers. Indeed, the introduction of new modalities in the communication between humans and machines will bring a degree of richness to the interaction, leading to a more and natural communication, inspired by the way we interact with each other.

One application area for synthetic characters is the area of virtual environments for entertainment. Games and interactive storytelling are applications where synthetic characters play fundamental roles, such as for example, opponents in a game, actors in a story (see [5] [12]) or even storytellers. However, creating these characters is still a difficult and complex task, requiring expertise from diverse areas such as psychology, artificial intelligence, computer graphics, computer science, design, facial and gesture movement studies, theatre, among others. Bringing all these competencies together is what gives synthetic characters the richness needed to be believable. Believability has been one of the most debated properties of synthetic characters and the goal

of the researchers working on this area for many years now. The term was introduced by Bates' team [1] relating to characters that give the *illusion of life*, facilitating the user's suspension of disbelief. Also explored intensively in literature, believability is still the Holy Grail of the synthetic characters' research area. Why are synthetic characters not believable? Is it too hard?

There are several key features for the achievement of believability. One of them, and perhaps one of the most important, is that of *autonomy*. Tamagotchis, Aibos, and even computers in general, can produce behaviour that is not completely predictable and can only be influenced by the user to a certain degree. This autonomy makes the users take them more seriously, as if they were humans. Reeves and Nass [15] have shown that people in general tend to relate to computers in a social manner, ascribing "human like" properties to machines, such as for example personality. This allows for a natural establishment of computers as autonomous. Another important factor that leads to believability is the perceivable actions and expressions of the characters. In particular, the expression of emotions makes these characters more human-like and believable. According to Thomas and Johnston [17], animators from Disney, there are three important points when expressing emotions: (1) the emotional state of the character must be clearly defined, in such a way that is undoubtedly perceived by the viewer; (2) the emotional state affects the reasoning process and consequences must be perceivably reflected in the actions of the characters; and (3) emotions can be accentuated or exaggerated, to clearly communicate the viewer the emotional state of the character. Another element is personality. A coherent character, that acts according to its personality will be more believable than a character that has no long term coherence in its behaviour.

Thus it is not so much one property or another that matters but the combination of all these factors, that together providing ingredients for the building of the believability in a synthetic character.

However, when we watch a film, or read a book, we do not only suspend our disbelief and look at the characters as "alive", we also establish emotional relations with the characters. We feel sad when they are sad, angry when something unfair is done to our favourite character, and so on. That is, we put ourselves in the shoes of the characters, and feel emotions about what is happening to them. Who does not remember the emotional power of the situations created in Disney's Ugly Duckling film, when the poor duckling fails everything, the other characters ridicule him, leading him to fail again and again. The emotion felt when he finally succeeds, in a unique and heartbreaking way, is such, that everyone feels like cheering [17]. So, together with emotional expression, autonomy and personality, we believe that "empathy" is also an important factor that can lead characters to become believable. Empathy can be defined in broad terms as "An observer reacting emotionally because he perceives that another is experiencing or about to experience an emotion". Another, less broad, definition is given by Wispé that described empathy as "the process whereby one person 'feels her/himself into the consciousness of another person" [19].

Bringing these notions to the construction of synthetic characters, we will have two main goals in mind:

- First, to build characters that, by their actions and behaviours, are able to show empathy (or not) for other characters and thus become more believable ; and
- second, to build characters that, by their appearance, situation, and behaviour, are able to trigger empathic reactions in the user. These emotional reactions will lead to more believable characters.

Creating characters that have the power to make the user feel emotional reactions is still an unexplored and hard research topic. So, in this paper we will discuss the role of empathy in the construction of synthetic characters, provide some requirements for such construction and illustrate the concepts with a specific system developed for addressing bullying problems in schools using an interactive virtual storytelling environment.

The rest of this paper is organized as follows. First we will define empathy and the role of empathy in synthetic agents. Then we will provide a set of properties needed in order to build such agents. To illustrate these properties we will describe a project, VICTEC[1], where empathy is essential for its goal. Finally we will discuss the results achieved so far and where the project is heading.

2. Empathy in Synthetic Agents

The term "empathy" stems from Titchener [18], who derived it from the Greek "empatheia" which means "passion", "passionate affection" or "to be much affected" (Levy, 1997). Titchener used "empathy" as a translation of the German term "Einfühlung" which means "feeling into" somebody. In general, defined as "the capacity of participating in or vicarious experiencing of another's feeling, volitions, or ideas and sometimes another's movements to the point of executing bodily movements resembling his", (Dictionary). This definition implies that, firstly, empathy is an internal state similar to an emotion; and secondly that emotional state can sometimes be recognised through imitative bodily movements. All these behaviours involve mimicry and affective communication. In general, empathy refers not to processes be-

1 VICTEC (Virtual ICT with Empathic Characters) is an EU funded project under the IST programme.

tween a person and an object, but to processes between two persons, where one person perceives the other. The perceiving person, or the persons who ”feels into” the other person, is called the ”observer”, and the perceived person is called ”target”.

2.1. Constructs of Empathy

Most contemporary psychologists agree that there are two aspects of empathy that have to be distinguished. The first one is the *mediation of empathy* and the second the *outcome of the empathic process*. Concerning the mediation of empathy, one can distinguish two different ways of mediating: (1) via the situation and (2) via emotional expressions.

When empathy is mediated via the situation, the observer concludes the emotional state of the target from the situation the target is dealing with. For example, if the observer perceives the target losing her wallet, he may think that he would be very sad in that situation himself. So the target will probably feel sad, too. Empathy may also be mediated via emotional expressions of the target. This occurs when the observer interprets the behaviour of the target, as for example, assuming that when a target smiles he/she is probably happy.

These two aspects give rise to the empathic process, which in turn may have an outcome. According to Davis [9] empathic process outcomes can either be cognitive or affective. A cognitive outcome involves cognitive activity of the observer, such as obtaining more information about the target or acting to help the target , whereas an affective outcome (the one we normally consider as empathy) means that the observer experiences an emotion because of his/her perception of the target.

2.2. Empathy and Synthetic Agents

As already mentioned, empathy can be part of our agents in two distinct forms:

- *In the behaviour of the agent*- that is, the agent behaves in an empathic way towards other agents and towards the user;
- *In the relation the agent establishes with the user*- that is, the agent looks like and acts in a way that leads the user to establish an empathic relation with it. Thus, ”an agent that is able to, by its behaviour and features, allow the users to build an empathic relation with it”.

Note that these two forms of social relations are interconnected. However, the first notion leads to ”Empathic Synthetic Agents”, where empathy is expressed by the agents towards other agents or towards the user. The second one will lead to the notion of ”Empathy Evoking Synthetic Agents”, where the empathic reactions are experienced by the user as a result of the behaviour of the synthetic agents. Here the ”empathic relation” with the user means that the user perceives and models the emotion of the agent experiencing an appropriate emotion as a consequence. We believe that these two emotional charged aspects of agents/users communication are also a key factor for achieving believability.

3. Example Application: FearNot!

In order to illustrate the building of empathic agents, we will present an application, FearNot!, where empathy is at the centre of the interaction between users and characters. FearNot! is a computer application being developed to tackle and eventually help to reduce bullying problems in schools.

Bullying behaviour is characterised as *”a repeated action that occurs regularly over time, and usually involves an imbalance in strength, either real or perceived”* [6]. Bullying has associated with it a wide variety of behaviours such as hitting, kicking or punching, in the case of direct bullying, or, in relational bullying, social exclusion or malicious rumour spreading. It is this continuum of violent pressure (physical or verbal) that distinguishes bullying from other types of violence, making its consequences so potentially dangerous and enduring.

A wide range of anti-bullying initiatives have been developed for many years, focusing on the victim, the bully or the whole problem. One approach uses live performance to dramatize the problem, with actors presenting a narrative, followed by workshops in which groups discuss the story. In an extension of this, Boal’s Forum Theatre [3] allows each group to take responsibility for one of the characters and to meet with the actors ’in role’ between episodes of the story. Such an approach is however expensive and hard to organise, while the presence of the group is often intimidatory (some members may be bullying others) and can even emphasize existent conflicts.

Virtual learning environments can be a solution to such problems. Through the implementation of a virtual Forum Theatre, one can hope to create a safe environment in which individual children can explore different perspectives on bullying behaviour. Using state-of-the-art 3D interactive graphics and synthetic actors, we expect to achieve individual interaction based on creating empathy with the characters. These were the foundations that forged the VICTEC project. The overall pragmatic objective of the project is the development of *FearNot!*, an anti-bullying demonstrator in which children age 8-12 experience a virtual scenario where they can witness (in a third-person perspective) bullying situations. To avoid group pressure and enable individualized interaction, the experience is for a single user. The child acts as an invisible friend to a *victimized* char-

acter, discussing the problems that arise and proposing coping strategies. Note that in bullying situations there are quite clear identifiable roles: the *bully*, the *victim*, *bully-victim* (a child that is sometimes victim and sometimes bully) and bystander.

Figure 1. A first prototype of the FearNot! demonstrator

The scenario begins by introducing the child to the school environment and the characters, providing a starting context. The whole session is developed one episode after another. After each episode, the child takes the role of a friend of the victim advising her on what to do. A dialogue is established between child and victim. This dialogue concludes with the selection of a coping strategy which influences the course of the events in the episodes ahead. Within an episode, the child is mostly a spectator of the unfolding events (the narrative emerges from the actions of the participant characters). After each episode, however, the victim will seek refuge in a resource room (identified as a library) where a personalized conversation with the user can occur. Here, a short dialogue takes place where the victim raises the main events that occurred in the previous episode and asks for the child's (user) opinion and suggestions for future behaviour. Nevertheless, note that the victim is clearly recognized as a *believable self*, with its own personality and behaviour, and thus may decide to reject the user's suggestions.

Each dialogue finishes with a decision that influences the character's behaviour in future episodes. Thus, episodes are not pre-scripted, and the characters act autonomously, performing their roles *in character*. To ensure a user-centered experience, the overall characteristics of each episode are decided by an external entity, a *stage manager* (see [16] for more details). This entity selects appropriate places and characters that *potentiate* the occurrence of certain events favouring an authored educational purpose. Nevertheless, the characters autonomously decide their actions.

Bullying, like many of our everyday problems, has no 'magic wand' solution - only more or less frequently successful strategies. The only universally accepted message is that passivity is no solution, and one should never suffer in silence. The purpose of the system is not to deliver a 'right answer' but to present a multitude of options to the child, and allow him or her to explore possible consequences for certain courses of action. The use of an intelligent virtual environment with characters and emergent narrative gives us that possibility.

4. Creating Empathic Agents in FearNot!

How do we build synthetic characters that promote empathic relations between users and those characters? Previous work on synthetic characters, such as [2] or [11] have focused on aspects such as body expression or trust. We will address this question in two steps. The first one is architectural, that is, we will try to see what kind of software architecture is most adequate to achieve the types of behaviour that can lead to such empathic relations. This is done by providing also an example of the FearNot! agents. The second issue is more visual and situational, and it has to do with the expressions, the looks, and the situations the characters are in that lead the user to establish such empathic relations with the agent.

4.1. Architecture for Empathic Agents

According to Feshbach [7] empathy can be seen as a shared emotional response that is contingent on three factors: (1) perceptual and cognitive ability to discriminate affective cues in others; (2) cognitive skills to assume the perspective and role of another person; and (3) emotional responsiveness, that is, the ability to experience emotions. Given these elements, and taking into account also the fact that we are creating autonomous agents, an empathic agent architecture must follow the following constraints:

- Capacity of the agent to recognize the other's agents emotional states by their "emotional expression" (which can be modelled symbolically) or by reasoning over the situation encountered;
- Capacity of the agent to communicate with other agents
- Capacity of the agent to process emotions (to embed in its architecture the appropriate mechanisms that allow for emotions to be triggered by the situations the agent is exposed to)
- Capacity of the agent to express emotions by different modalities (voice, facial expressions and body expressions)
- Capacity of the agent to respond to emotional states through coping strategies

To achieve this, the architecture must contain a way to appraise situations (whether actions or expressions of the other characters or situations) that will lead an emotional state to become active (appraisal module). It must also contain a representation of others, in particular their emotional state. Figure 2 shows the architecture built for the agents in FearNot!.

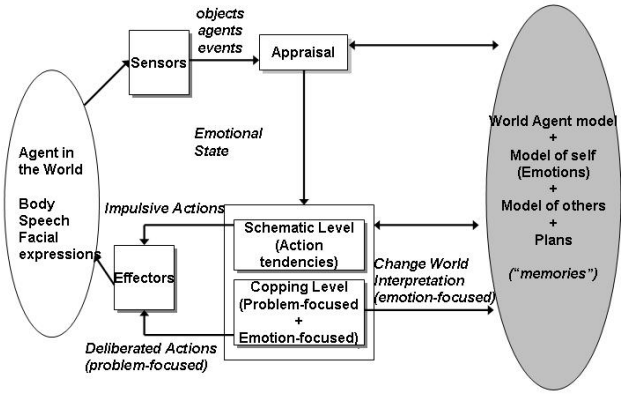

Figure 2. Diagram of the Architecture of the Agents in FearNot!

The main aspects of this architecture are:

- A model of the world that includes a model of the self with emotions representation and a model of the other agents (also an affective model);
- The emotional model is parameterized for agent based in a personality profile (see bellow);
- An appraisal component;
- An action selection component that depends on action tendencies associated with the emotions represented;
- A coping mechanism;
- An affective expression component including body, facial and speech.

4.1.1. Appraisal The appraisal component is responsible for appraising the situations (events) of the character and generating an emotional state. In the case of FearNot!, events are appraised based on the Ortony, Clore and Collins' Cognitive Theory of emotions [14], which considers appraisal as a subjective evaluation of a given event according to the character goals, standards and beliefs. Our model uses two of the OCC goal types (the active-pursuit goals and interest goals), where the active-pursuit goals are goals that the characters actively try to achieve, like going to the football match. In contrast the interest goals represent goals that a character has but does not actively pursue, for instance wanting his favourite team to win a match. The OCC theory defines another type of goal, the replenishment goals, which are not used in this case. The main aspect of the model is that emotions are considered as valenced reactions to the appraisal of an event, named emotional reactions, and are classified in three categories:

- Emotions based on aspects of objects: reaction to the proximity of a liked/disliked object (for example, our victims like their objects, such as their pencil cases and their bags) .
- Emotions based on actions of agents: triggered by the praiseworthy/blameworthy appraisal of an action regarding the agent standards (for example, the actions of a bully in hitting the victim can be appraised by a bystander with a negative valence).
- Emotions based on consequences of events: reactions to prospect relevant and prospect irrelevant events (for example, our victim has the goal of playing in the team but gets kicked by the bully so hard that he cannot play the game anymore).

As in [13], the creation of emotions is handled by an automated mechanism, which launches emotions according to the events perceived and the emotional characterization of the characters. For each character it is therefore necessary to specify the events to which it reacts emotionally. This is done by providing values or functions for the several appraisal variables defined by OCC, such as for instance, the unexpectedness variable. Each time an emotion is created, a potential value for the emotion is calculated from the appraisal.

This model works as a framework to organise and build the agent's minds, allowing for the parameterization of different personalities and roles (such as bully and victim) using the same generic base architecture. Each character has a set of emotional thresholds and emotional decay rates (one for each emotion type) according to his personality and more importantly its role (bully, victim, bully-victim, or bystander). Based on data we have about the characteristics of these roles, we are able to parameterize the characters according to their role. The threshold represents the character's resistance to an emotion type (for example, bullies may have a higher threshold to negative emotions than victims). The decay rate represents how fast the emotions of an emotion type fade out. When the emotion intensity reaches zero (depending on the decay rate), it is removed from the character's emotional state. An emotion is added to the character's emotional state only if the emotion's potential surpasses the defined threshold. If an equivalent emotion already exists, no emotion is added, but the existing emotion's

potential is recalculated using the logarithmic sum of both emotion's potentials. Two emotions are said to be equivalent if they are of the same type and directed to the same character.

4.1.2. Action Selection Once a situation is appraised and an emotion triggered, agents need to choose the most adequate action to perform, and emotions must have an effect on such actions. According to Frijda [8] action tendencies are defined as "states of readiness to achieve or maintain a given kind of relationship with the environment". They can be seen as small plans or programs to achieve such relationships. These plans can put in a state of readiness when an emotion is triggered. Although Lazarus [10] agrees with Frijda that action tendencies are characteristic for emotions, he does not conceive them as plans. He states that action tendencies are innate biological impulses, while coping "is a much more complex, deliberate and often planful psychological process". This distinction is also important for some of the characters actions in FearNot!. For example, if the Victim character starts to cry when he is bullied, it is not because he has a goal that involves crying. Crying is a reaction to a particular distressed emotional state. Thus, our approach is similar to the TABASCO architecture [4], based on Leventhal and Scherer's Emotion Theory, following Lazarus' definition and using a multi-level action selection mechanism with three layers. We have simplified to two layers corresponding to: the *Schematic layer* which is associated with the predefined action tendencies; and the *Conceptual layer* which uses planning and deliberation to cope with the environment.

Schematic Layer: The *Schematic layer* implements the character's action tendencies. It consists of a set of actions that are available according to the character emotional state. An action is defined with the following properties: *Name* - identifying the action, used by the effector component when it has to send the action to the virtual world; *Preconditions* - which is a set of preconditions that must be verified so that the action can be executed; *Eliciting Emotion* - which corresponds to the emotion type that triggers this action. Additionally an intensity threshold may be defined, only allowing mild or strong emotions of the specified type to activate the action. The action selection mechanism starts by determining which actions can be executed, then it selects the action triggered by the most intense emotion the character is experiencing. Since these actions represent innate reactions to the environment, they have priority over the Coping level actions and thus are executed. For instance, if the bully most intense emotion is a Gloating emotion towards the victim (happy about something bad happening to the victim), it will reactively mock him.

Coping/Conceptual Layer: Similar to Marsella and Gratch's work [11]we have two types of coping: Problem Focused Coping and Emotion Focused Coping. While the first focuses on acting on the environment (using planning abilities), the second works by altering the character's interpretation of the circumstances. Examples of Emotion Focused Coping are Positive Reinterpretation and Shift Blame. Positive reinterpretation works by finding positive meaning in negative events, and shift blame may be applied when an undesirable effect has an ambiguous causal attribution. The coping strategy selected by the character is influenced by the character personality. While the Bully character prefers to act over the environment to achieve his goals (like bullying other kids), the Victim tends to adopt emotion-focused coping. To give a more specific example, consider the event of the bully beating the victim and then leaving. The victim may focus on the positive side of his lunch money not being stolen, thus reducing his distress (positive-reinterpretation).

4.2. Building empathy

But generating the behaviours of the characters is not enough if they are not displayed to the user in some manner. In FearNot! characters are embodied, which means that we can use facial expressions, attitudes, body expressions to convey their emotional states. But, is embodiment a requirement for empathy? Certainly not, otherwise literature would not raise the strong emotions it does. When children read stories about their favourite characters and fear for them in dangerous situations it is not because of the character's facial expressions or body animations, but because of the narrative situations and the closeness children feel with what the characters go through in the stories. However, in certain cases, embodiment must be seen as another dimension in the whole process of empathy creation. We will therefore consider three main factors for building empathy: proximity; facial and body expressions and situations.

Proximity There is evidence that people experience more empathic emotions when the incidents are associated with people with whom they have a communal relationship (where communal relationships are friendship, romantic love or family relationship). Further, people who feel similar to another person in need have shown to experience more empathic compassion for that person, than those that do not feel that similarity. Also, people who perceive themselves to be similar to another also perceive themselves as having stronger communal relationships with the other, and in turn, experience more empathic compassion when the other is in need. All these findings suggest that one way for the user to feel empathy and put him/herself in the place of a character is to find similarities with between the user and the character, so that the user feels similar to the character.

In FearNot! we designed the system taking the aspect of proximity into the whole design process. From the start of the project we have involved children and teachers, and

the characters were evaluated by the children from their creation. Also, we designed the characters and the situations for the age groups we are targeting. We are now designing characters with uniforms for the UK schools to make characters closer to the children and allow children to identify with them. We also have considered specific situations for both genders (more direct bullying for boys and relational bullying for girls). Finally, we used very popular characters from a Portuguese children's web portal (Cidade da Malta in http://www.cidadedamalta.pt/), originally in 2D and converted to 3D for the project.

Figure 3. Three of the characters developed for the FearNot! application (John, the victim, Martinha, the neutral and Luke, the bully)

Facial and body expression As described earlier, empathy can be mediated in two ways. The first, is cognitive in nature, in that the character must behave in ways that show empathy, such as understanding others, mimicking others' emotions, and acting as if the others' emotions affected it. The second is affective, and the character must be able to express emotions in facial expressions, voice and body posture. If the user perceives the agent expressing emotions that are adequate to the displayed situation, believability and empathy should increase. In FearNot! we use mainly facial and body expression. A precondition therefore is that the emotional expression can be recognized by the user correctly. Another possible interaction modality that could reduce misinterpretation of the emotional facial and body expressions, is natural language. The agent could inform the user about his emotional state verbally. One should note that the cognitive component of empathy would be realized if the user has the impression that the virtual agent "knows" something about the user's inner state.

In order to clearly convey the character's emotional state we decided to adopt cartoon like characters. In fact, tests carried out with children in associated schools revealed that children preferred the cartoon characters. This also reduces the importance of using complex and resource intensive real-time facial animation and lip-sync. Simple textured faces (see Figures 3 and 4) can be very believable (even more believable than perfectly modelled faces).

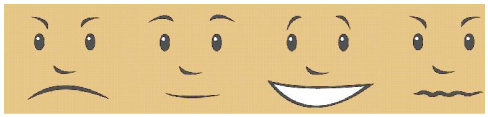

Figure 4. Example of Some Facial Expressions in Characters

Situation Bullying is episodic, where a sequence of similar situations - sometimes apparently innocent on their own - builds into a serious issue that affects the victimized child. Such a build up of situations is essential for the development of empathy. Long-term and abstract planning of all the possible situations would be extremely complex and is avoided by using the characters behaviours to create an emergent narrative. However, emergent narrative where actions of the characters are generated autonomously from their internal states, may not guarantee believable bullying scenarios. Thus a narrative management module was put in place, to guarantee that the situations lead to the empathic relations we desire. A *stage manager* is therefore used to determine the required characteristics of each episode, drawing on situations that we clearly find in schools. This entity selects appropriate places and characters (according to the knowledge of experts in bullying) that *potentiate* the occurrence of certain events favouring specific authored purposes. Nevertheless, although the situation is externally prepared, the characters autonomously decide their actions, performing their roles *in character*. For example, if we wish to potentiate a direct physical bullying event, we can choose a situation involving the bully and the victim alone in the dressing room. If some aggression is detected, the episode then halts and the system passes to the reflection phase (phase where the child advises the victim) .

5. Preliminary Results

One limited version featuring a single bullying episode of FearNot! has already been released and partially evaluated with several types of users. All the main aspects of the architecture are already in place and the characters built follow the requirements presented. These first evaluations focused on aspects of acceptability and believability: for example whether cartoon-like or realistic characters were preferred, how convincing the appearance, voices and animated behaviour of the characters seemed, whether the story was believable, and whether respondents liked or did not like the characters [20]. Several such evaluations have been carried out, some with the target age group, some with adults, including teachers, and some with researchers in synthetic characters.

%N: 38-52	Prime Character	Like Most	Like Least	Felt sorry	Felt anger
John	31	47	8	93	13
Martinha	45	33	37	0	3
Luke	24	20	55	7	84

Table 1. This table shows the results of a group of 52 children in the target age group in the UK, 27 boys and 25 girls.

Although no one character was preferred overall, there was significant age bias in character preference among the three in the scenario. The results presented table 5, are based on data from two classes of year 5 children, mean age 9.4 yrs (SD: 0.67), St John's school, Herts, UK, St Mary's school, Herts. The group had 27 (52%) boys and 25 girls (48%). Within this target age-group, there was a clear preference for the victim (John), followed by Martinha, the narrator. However, the preference is not for bullying role, but for gender. The impact of gender can be seen throughout the results, indicating that empathy is gender-specific within the target age group (which is related with the proximity factor). In terms of cognitive and affective empathy, 86% of children felt sorry for one/some of the characters (typically the victim) and 72% felt angry towards one/some of the characters (typically the bully). These results indicate that the agents in FearNot! generate appropriate empathic responses in child users. However, as noted in [20] substantially different results were found with adults, who appear to be more detached from the agents. Adult responses do not indicate an empathic relationship with the agents, rather factors such as the physical representation of the agents are used to rate the system.

6. Conclusions

In this paper we have provided a definition of empathic agents, giving a brief overview of how to build them. To illustrate these issues we have presented a system FearNot! that has been developed to address bullying problems in schools using empathic synthetic characters. From the experience and results we have with FearNot! we believe that empathy must be seriously considered when designing synthetic characters. Aspects of the relations between users and characters such as proximity, situation must also be looked at as well as emotional body and facial expression.

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