



LUND UNIVERSITY

Aesthetic stereotypes and virtual pedagogical agents

Gulz, Agneta; Haake, Magnus

Published in:
International Conference on ICT, Media & Learning (IML 2005)

2005

[Link to publication](#)

Citation for published version (APA):
Gulz, A., & Haake, M. (2005). Aesthetic stereotypes and virtual pedagogical agents. *International Conference on ICT, Media & Learning (IML 2005)*. http://www.lucs.lu.se/people/Agneta.Gulz/index_eng.html

Total number of authors:
2

General rights

Unless other specific re-use rights are stated the following general rights apply:
Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

Read more about Creative commons licenses: <https://creativecommons.org/licenses/>

Take down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

LUND UNIVERSITY

PO Box 117
221 00 Lund
+46 46-222 00 00

Aesthetic Stereotypes and Virtual Pedagogical Agents

Magnus Haake, MSc¹ & Agneta Gulz, PhD²

¹ Dept. of Design Sciences, Lund University (magnus.haake@design.lth.se)

² Div. of Cognitive Science, Lund University (agneta.gulz@lucs.lu.se)

**Abstract accepted for the International Conference:
ICT, Media & Learning - Moving Technology, Changing Society (IML'05)
Copenhagen, Denmark, November 24-25, 2005.**

Virtual pedagogical agents, i.e. computer generated characters with pedagogical roles – instructors, coaches, learning companions, etc. – are entering the digital society [1]. Extensive research has been undertaken regarding movements, gesturing, speech, and communicative and pedagogical strategies, but there is a *Carte blanche* when it comes to their *visuo-aesthetic appearance*: body, face, gender, ethnicity, clothing, graphic style, iconicity, etc. [2].

Only recently, some studies of the effects of visual appearance of virtual agents on learners have been carried out [2,3,4]. A. Baylor has investigated the effects of stereotype busting by designing an engineering coach as an extrovert and markedly feminine woman [3]. Another study visualized an expert agent as belonging to an ethnic minority [4]. The results indicate that visual design of agents can affect students' self-efficacy as well as their motivation to pursue studies in a field.

Computer games and educational multimedia are related, as evidenced by words such as *edutainment*. They are also both visual media and, with respect to visual appearance, many *game characters* reflect mainstream discourse from other media, reproducing and reinforcing gender stereotypes as in many of the so called *girls games* from the late nineties [5]. In games for (young) adults, female characters are frequently designed as inferior to the male characters and given a stereotypic and even denigrating visual appearance [6]. Furthermore, computer media can go even one step further than TV, video, and magazines in its portraying of *the ideal* – the perfect face, the perfect body, the perfect behaviour – presenting stereotypic instances that are actually *never* found in real life, such as biologically contradictory female bodies with voluminous breasts combined with micro-thin waists.

A more constructive approach can, on the other hand, be found in computer game communities where players contribute to the development of games and

characters. These communities seem to engender a remarkable diversity in characters such as new kinds of female heroines, androgynous characters and in-betweens [7].

This points towards the possibility to use virtual pedagogical characters as gender busters to explore new identities and social roles for players of all genders, as well as towards the risk that agents will act as reproducers of stereotypes – not the least regarding visual aspects. A key factor is the considerable degree of freedom offered in the virtual world. The ease to “cut and mix” and thus break down fixed ascriptions of roles and attributes can open up for an acceptance of a range of styles and identities. But more knowledge is required on *what* effects can be reached and *how* – and visual aspects deserve increased attention.

The design of virtual characters of today pulls towards *realism* in all aspects. There is a twofold ground for this: (1) the wish to *simulate* human beings *as closely as possible* in order to *explain and understand humans*; (2) the insight that the interaction between humans is relatively smooth, efficient and stimulating, wherefore the interaction between a human and a virtual character should be designed as close a human as possible in voice, dialogue, and gestures.

Likewise, realism in visual appearance seems an obvious goal. But here is reason to stop to ponder. If we are to interact with characters almost inseparable from a human being, ethical questions about confidence and responsibility for the effects and results of the interaction will arise [8].

A further ethical issue relates to the broader media culture and its promotion of super people with ideal lives, bodies, and looks. Until now we look at and read about them in movies and magazines. What if we also are to interact with such ‘ideal super people’? How will this affect our self image and self esteem in an era already desperately pursuing perfection in appearance?

We argue that realism may not be the goal to strive for. Instead, one should look closer at attributes such as confidence, believability and – as regards visual appearance – iconicity. With visually less realistic, more iconic, characters, several ethical problems may be reduced. At the same time positive effects of confidence and believability can be literally unaffected or even strengthened, as it seems that people easily can form close relations and identify with iconic characters [9,10]. Overall, our conclusion is that research on visual aspects in virtual pedagogical agents should be outlined today, before large scale, commercial developers set the agenda – and not become an object of retroactive studies on established facts.

References

- [1] Chou, C-Y., Chan T-W., & Lin, C-J. Redefining the learning companion: the past, present, and future of educational agents. *Computers & Education*, 40, (2003), 255-269.
- [2] Gulz, A. & Haake, M. Social and visual style in virtual pedagogical agents. In *Proceedings of the Workshop on Adapting the Interaction Style to Affective Factors, 10th International Conference on User Modelling, (UM'05)*, Edinburgh, Scotland, July 23-29, 2005.
<http://www.di.uniba.it/intint/UM05/Gulz.zip>
- [3] Baylor, A. & Plant, A. Pedagogical agents as social models for engineering: The influence of agent appearance on female choice. In *Proceedings of the 12th International Conference on Artificial Intelligence in Education (AIED'05)*, Amsterdam, The Netherlands, July 18-22, 2005.
http://ritl.fsu.edu/papers/weng_aied_final.pdf
- [4] Baylor, A. The impact of pedagogical agent image on affective outcomes. In *Proceedings of the Workshop on Affective Interactions: Computers in the Affective Loop, International Conference on Intelligent User Interfaces (IUI'05)*, San Diego, CA, January 11-12, 2005.
http://garnet.acns.fsu.edu/%7Eabaylor/PDF/image_iui.pdf
- [5] Cassell, J. & Jenkins, H., (Eds.). *From Barbie to Mortal Kombat – Gender and Computer Games*. MIT Press, Cambridge, MA, 1998.
- [6] GameGirlAdvance. *Game+Girl=Advance Weblog*, 2004.
<http://www.gamegirladvance.com/>
- [7] Schleiner, A-M. Mutation.fem. *Text for the “Alien Intelligence” Exhibit*, Kiasma, Museum of Contemporary Art, Helsinki, Finland, 2000.
<http://www.opensorcery.net/mutation/>
- [8] Gulz, A. Virtuella virtuosser ökar motivationen. *Axess*, no. 1, 2004.
- [9] Gulz, A. & Haake, M. Design of animated pedagogical agents – a look at their look. *International Journal of Human-Computer Studies*, in press.
- [10] McCloud, S. *Understanding Comics: The Invisible Art*. HarperPerennial, New York, NY, 1993.