The Uncanny in New Media Art

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Abstract
Using Freud's essay on "The Uncanny" as a point of departure, I examine a selection of new media art objects and installations and discuss how the dimension of uncanniness is present and contributing to our aesthetic experience of the works. Discussing examples in which the dimension of the uncanny adds an aesthetic ambivalence, without which the works discussed would be less aesthetically interesting, I argue for the particular relevance of this concept to genres of new media art.

Introduction: The Uncanny

In his 1919 essay "Das Unheimliche", Sigmund Freud discusses the concept of the "uncanny", and why it is that certain objects, phenomena and situations arouse in us a feeling of uncanniness, while other, almost similar objects, phenomena and situations, don't [2]. As a figure, he explains, the uncanny is double and ambivalent: the German term from which it originates is *das Unheimliche*, literally translating to "the unhomely". It is a negation of the German *Heimlich*, homely, which implies the home-like, cosy, familiar. Being the negation of this term it can never occur independently of it: the uncanny thus needs an element of the homely, known, and familiar in it in order to be experienced as uncanny. It never represents an entirely new situation, but always involves an element of something previously thought or experienced, which has later been repressed. In psychoanalytical terms "an uncanny experience occurs either when infantile complexes which have been repressed are once more revived by some impression, or when primitive beliefs which have been surmounted seem once more to be confirmed" [2:372]. Put more simply, "an uncanny effect is often and easily produced when the distinction between imagination and reality is effaced, as when something that we have hitherto regarded as imaginary appears before us in reality, or when a symbol takes over the full function of the thing it symbolizes, and so on" [2:367].

Freud starts his discussion by referring to a previous essay on the uncanny written by Ernst Jentsch [1], in which Jentsch connects the uncanny to *intellectual uncertainty*, in particular to "doubts whether an apparently animate being is really alive, or conversely whether a lifeless object might not in fact be animate" [quoted in 2:347]. Although Freud agrees that such experiences may arouse feelings of uncanniness, he denies that intellectual uncertainty is a primary factor behind the uncanny. The recurrence of something repressed is required in order for a situation to be experienced as

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uncanny, he maintains: without such it can merely be frightening. So when uncertainty as to whether a doll may in fact be alive is experienced as uncanny, this can be traced back to the repressed, infantile desire for our toys to become alive, and when we find dead bodies uncanny, uncertain as to whether or not they really are dead, this is a remnant of a once-optimistic belief in animism, characteristic of a more primitive stage in our development. Interestingly, another figure that is often seen as uncanny, the figure of the double, was also originally friendly. According to a seminal essay on the subject by Otto Rank [2], the function of the double was originally as an insurance against extinction. "Such ideas, however, have sprung from the primary narcissism which dominates the mind of the child and of primitive man. But when this stage has been surmounted, the 'double' reverses its aspect. From having been an insurance of immortality, it becomes the uncanny harbinger of death" [2:357].

In particular, it is Jentsch's analysis of the uncanny in E.T.A. Hoffmann's story "The Sandman" [4] that motivates Freud's discussion. Jentsch here connects the uncanny to uncertainty regarding the nature of Olympia, a mechanical doll with which Nathaniel, the main protagonist, falls in love. Nathaniel does not realise that Olympia is a doll until a scene where her two creators quarrel over her, and one of them in anger tears out both of her eyes. According to Freud, however, it is not intellectual uncertainty but rather the idea of being robbed of one's eyes that causes the uncanniness in this scene, as losing one's eyes is a fear typically connected to the castration complex. In Freud's analysis Olympia here represents Nathaniel's female double, so that the scene becomes a representation of Nathaniel's imagined castration by his father. As shown in Jane Marie Todd's excellent analysis of Freud's essay [15], however, Jentsch's focus on the uncertainty surrounding the status of Olympia has after all the same implications as Freud's insistence on the castration complex being the cause of the uncanny in this scene. In fact they are two sides of the same coin: "Freud dismissed Jentsch's theory of the Unheimliche even though, as we shall see, it, too, comes back to the question of castration. In 'Analysis of a Phobia in a Five-Year-Old Boy', he wrote that the child, little Hans, 'had got hold of an essential characteristic for differentiating between animate and inanimate objects.' In Hans's words, 'a dog and a horse have widdlers (Wiwimacher); a table and a chair haven't' (10:9; 'to widdle' is British colloquial for 'to urinate'). This formulation is not a peculiarity on little Hans's part. According to Freud, all children (male and female) believe that every living being has a penis, unless it has been punished by castration. So that Jentsch's theory of the *Unheimliche,* the uncertainty whether a creature is animate or inanimate, becomes indistinguishable from Nathanael's horror when he sees Olympia 'castrated.' It is the loss of her eyes that makes of Olympia a creature less than human, and Freud had already set up the link between the eye and the penis. He was too quick to dismiss Jentsch's theory as inessential: Nathanael's castration complex reaches its crisis when he realizes that Olympia is inanimate, that is, when he sees that she has lost her eyes" [15:524-5].

Todd points out the social significance of the castration of Olympia, as her being "denied life, power, and autonomy, all symbolized by the eye/penis. By passing over the theme of the doll Olympia, Freud failed to see the social meaning of castration," she writes [15:525]. Her feministic reading also reveals other blind spots in his analysis, concerning the power of the female gaze: Once he mentions, without further pursuing, an episode in which the power of the female gaze gives life to inanimate objects [2:355]. He also gives an example in which the female gaze is recalled as uncanny, where he has lost his way in an Italian provincial town and involuntarily returns three times to the same street where "nothing but painted women were to be seen at the windows of the small houses" [2:359]. "Freud", writes Todd, "who, by his own account, rarely felt this *unheimlich* sensation, felt the inescapable gaze of these painted women (human dolls?) and felt helpless. Under their gaze, Freud is reduced to a mechanical repetition that he cannot control" [15:526].

As Jentsch's theory of the uncanny fails to satisfy a psychoanalytical explanation of the phenomenon, Freud decides to ignore it, but admits that he may be wrong in doing so. While he feels certain that his own, psychoanalytical theory will account for all real-life encounters with the uncanny, he admits that in the field of aesthetics, especially in fiction, there might be other elements determining the production

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of uncanny feelings. Reserving his inquiry for real-life encounters, however, is difficult as there are very few available. Basing his theory partly on examples from fiction, on the other hand, is problematic as "a great deal that is not uncanny in fiction would be so if it happened in real life; and […] there are many more means of creating uncanny effects in fiction than there are in real life" [2:373]. New media art shares these characteristics, having still more means to create uncanny effects than those available to fiction media at the time Freud's essay was written. My concern in this paper, however, is not to contribute to a general theory of the uncanny, but rather to examine specific aspects of the uncanny that are made available to us through new media art, in order to show how these genres expand our field of aesthetic experience.

Previous research on media and the uncanny has addressed the uncanniness of confronting one's double, either on screen [1] or on the phone [10], as well as notions of modern media as haunted, functioning like the spiritual media of the past transmitting messages from the other side [12]. Such notions have been explored also in media art, for instance by Susan Hiller in her video installation *Belshazzar's Feast* from 1983-4, or by Susan Collins's pixel-by-pixel transmission from a haunted house in *The Spectrascope* (2004), both shown at the "Haunted Media" exhibition at the Site Gallery in Sheffield in 2004 [3].

The works discussed in this essay, however, actualise the uncanny not so much in terms of the supernatural as in their blurring of the lines between man and machine, animate and inanimate. In order to come closer to an understanding of how uncanniness is involved in our reception of this type of new media art works, I will examine the works in the light of three analytical concepts, derived from the previous discussion of Freud's essay on the uncanny. These concepts are *intellectual uncertainty*, *the double* and *surveillance/control*. "Intellectual uncertainty" refers to Jentsch's assertion that the uncanny is primarily connected to insecurity, in particular concerning an object's status as animate or inanimate. Insecurity in general, however, is also thought to be a fertile ground for the uncanny. The concept of "the double" refers to the Doppelgänger motif previously discussed, whereas "surveillance/control" refers to the gaze, and the idea that attributes power and autonomy to the one who is in control of the gaze. The concept of "the uncanny valley" will also be introduced and discussed in relation to some of the works.

The choice of analytical concepts reflects the genres of new media art that I find particularly intriguing in terms of the uncanny: telepresence, artificial intelligence (AI), artificial life and robotics. These are genres which seem especially well-suited for uncanny encounters. Telepresence because of the surveillance aspect, subjecting us to the invisible gaze of an unknown other; artificial life and robotics because of the potential uncertainties they may cause as to their status as autonomous ("living") beings. Interestingly, AI-based works seem to be less likely to produce uncanniness than works based in artificial life, as their autonomy is often less convincing. As we shall see later in the analyses, however, when an artificially intelligent agent succeeds in creating uncertainty as to its status as autonomous subject, the uncanniness produced can be quite profound.

The Uncanny Valley

In 1970 the Japanese roboticist Masahiro Mori introduced a hypothesis about the relationship between robots and uncanniness which he called "The Uncanny Valley". He had discovered that the more human-like features a robot displayed, the more familiar it will appear to us, and the more positive our attitude towards it – up to a certain point, where attraction is replaced by repulsion. As we can see in Figure 1, in which the phenomenon is visualised, the valley can be understood as a line of demarcation between artificial and real life. As long as this line is not crossed, we are usually happy to invest empathically in the artificial object, projecting human features onto it such as desires, thoughts and emotions, magnifying its humanity and blissfully ignoring its machinic nature. As long as the object is obviously machinic, yet seductively human-like, this is our response. When its true machinic nature is less obvious, however, the fact that it is not quite human will demand our attention and disturb our empathic identification with it.
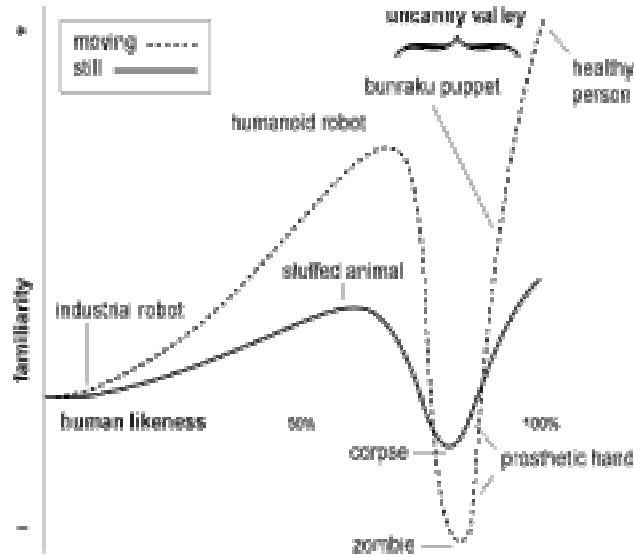
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Figure 1: The Uncanny Valley

As the illustration shows, adding movement to an object will generally exaggerate our attraction to it if it is situated outside of the valley, as well as magnifying our disgust against it if it is situated inside the valley. This is because movement generally is a sign associated with (real) life. Mori explains: "For the industrial robot, the impact of movement is relatively slight because we see it as just a machine. If it stops moving, it just stops working. But if programmed properly to generate humanlike movements, we can enjoy some sense of familiarity. Humanlike movement requires similarity of velocity and acceleration. Conversely, if we add movement to a prosthetic hand, which is at the bottom of the uncanny valley, our sensation of strangeness grows quite large" [7].

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W. Grey Walter's tortoise-like robots Elmer and Elsie (ELectroMEchanical Robot, Light-Sensitive) from 1948/49 can serve to illustrate the importance of movement and behaviour to our perception of what is lifelike (Figure 2).
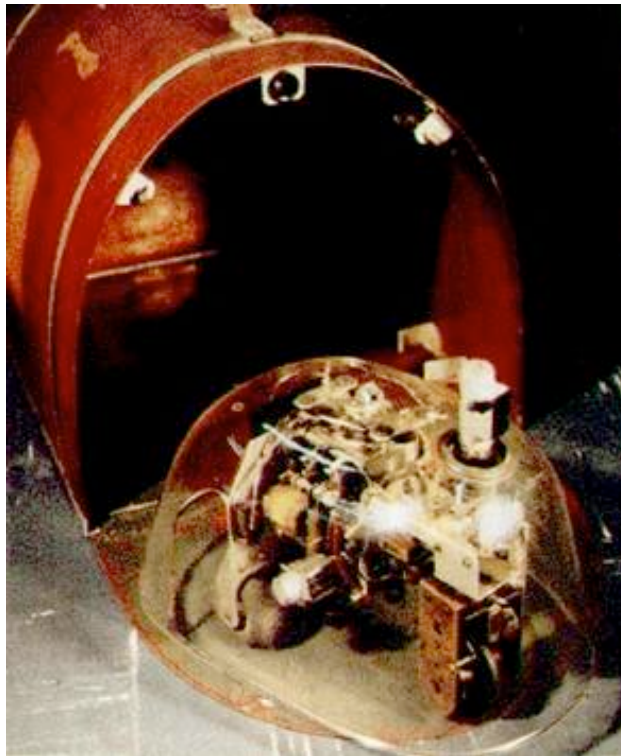
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Figure 2: One of Walter's tortoises [5]

Judged from their physical appearance only, the robots' resemblance to tortoises is limited to the transparent shell representing their "back" and protecting the crude machinery (although by no means hiding it). What really makes them lifelike, and makes us associate their appearance with an existing species, is their behaviour. Walter created the robots to test an idea of his, that human intelligence and complex behaviour have less to do with the number of brain cells we possess than with the various connections between them. Thus, Elmer and Elsie were given only two electronic brain cells each, but with a number of different connections between them [5]. (In comparison, a human brain consists of ten billion brain cells.) Despite this modest number of brain cells, however, the behaviour of Elmer and Elsie was quite impressive. In a manner similar to moths, they were attracted to light, and were able to locate and approach light sources in their environment. If they met obstacles, they would either push them away or find a way round them, and when their battery became low, they would return to their hutch to recharge. Fully charged, they would set out to explore the world again [5]. The behaviour of Elmer and Elsie proved Walter's hypothesis that even very simple brains in interaction with the environment are able to generate complex and unexpected behaviour. For instance, when both Elmer and Elsie were equipped with a lamp on top of their shell, they would approach and circle around each other, creating an impression of engaging in "social behaviour" [11].

The astonishingly lifelike behaviour of the tortoises apparently appealed to people, and received a lot of attention from the press. Walter even received letters from people wanting to adopt Elmer and Elsie, and admitted to a certain affection for them himself. At the exhibition "Alien Intelligence" at Kiasma/Helsinki in 2000, a brother of the tortoises (the originals are unfortunately lost) was shown and proved that their behaviour appears no less lifelike today, even if the audience may have grown more sophisticated since the 1950s. Renato M. E. Sabbatini explains the robots' appeal via Sherry Turkle's seminal study of the relation between human beings and computers in *The Second Self* [16], in which one of the major findings is that "human beings do not possess the psychological conditions to differentiate between a natural mind and emotion (as observed in another human being) from their artificial simulation (as generated by a computer)" [11].
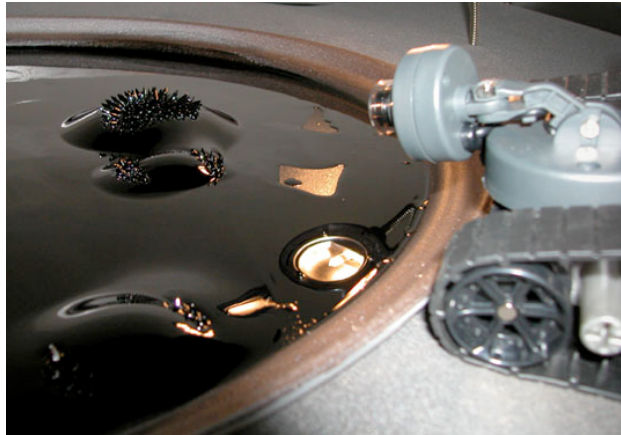
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Figure 3: Lost *(Sabrina Raaf 2003)*

Sabrina Raaf's installation *Lost*, a tribute to NASA's Mars Polar Lander which was lost on Mars in December 1999, is a wonderful expression of this psychological mechanism and the affectionate relationship we often develop towards human-like machines. In Raaf's installation, the Lander is exploring Mars on its own, encountering unknown and sometimes frightening species, unable to report back to us its discoveries (Figure 3) [6].

Clearly machinic looking, neither the tortoises nor the Polar Lander are close to falling into the uncanny valley. It seems that the machinic look of them prevents any real intellectual uncertainty as to whether or not they are truly alive, although the tortoises, owing to their lifelike behaviour, probably have a greater potential to arouse uncanny feelings in their spectator than *Lost* does. So far, the experience of encountering robots so humanlike they are uncanny is a fantasy familiar to us primarily through media such as literature and film. A very good example is the 1975 film version of the Ira Levin novel *The Stepford Wives* (1972), where the perfect robotic housewives are almost indistinguishable from human beings, as they are, of course, played by human and not robotic actors [14]. Created by the husbands to replace the human, less perfect wives, the robots embody the idea of the double as a forecast of our own extinction, which makes them no less uncanny. Where Freud found the representation of the mechanical doll Olympia in "The Sandman" too satiric to be properly uncanny, *The Stepford Wives* is also a more striking example of what Todd termed the social function of castration: to be "denied life, power, and autonomy, all symbolized by the eye/penis" [15:525].
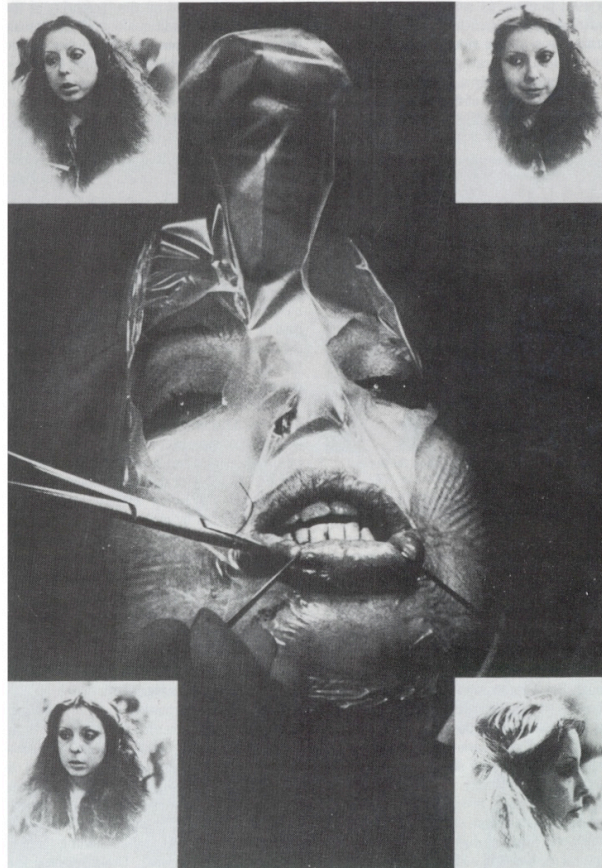
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Figure 4: Orlan [7]

Human artists approaching the robotic side of the scale can, however, be said to represent an expression of the uncanny valley in new media art today. The brutal instrumentalization of the body characteristic of Orlan's Carnal Art (Figure 4), for instance, or Stelarc's bodily surrender to the will of machines or remote others, as in the *Fractal Flesh*, *Ping Body*, and *Parasite* performances [13] are all examples of approximations towards the machinic that are likely to arouse feelings of uncanniness in audience as well as in performer.

The idea of the uncanny valley builds on an understanding of the uncanny resembling that of Jentsch, where the trigger of uncanniness is thought to be intellectual uncertainty as to whether we are dealing with a human or artificial being. The parameters of the model are appearance and movement, which can be more or less humanlike, more or less lifelike. Clearly machinic-looking robots that do not move should not arouse uncanniness, according to this model. This, obviously, can apply only to robots whose functionality is restricted to appearance and movement, as there are other relevant factors that could contribute to confusion as to the status of a robot, such as artificial intelligence. Additionally, as we remember, according to Freud, intellectual uncertainty is not in itself a sufficient trigger: a situation is not uncanny unless it involves the recurrence of a previously repressed thought or belief in the individual, for instance an impression from early childhood.

In Sara Roberts's computer installation *Early Programming* (Figure 5) a program called MARGO is used to simulate the reactions of a mother to her child. In the installation, the audience assumes the role of child, interacting with its mother by using a mouse to choose between possible responses represented on a computer screen. Each interactive session is introduced by a short video piece depicting a familiar childhood scenario, e.g. a fork with a huge Brussels sprout on it or the refreshing

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sight of a swimming-pool on a hot day. The scenes are accompanied by a mechanical-sounding voice uttering commands no less familiar, such as "Open up, here comes a bite!" or "No swimming! You just ate!"

It is possible to approach *Early Programming* as a game where our objective is to try not to upset Mum while at the same time not compromise our own interests too much either. Our options are listed as a set of responses, some obnoxious, others more polite. As our interests seldom correspond with Mum's, however, it is difficult not to upset her, and still, if we try really hard, behaving our best in order to please her, we will find that her mood is neither very predictable nor easy to control. This is when the uncanny feeling of having been in a similar situation before may occur, followed by another impulse: if this could in fact be our own Mum speaking, couldn't Mum, conversely, be a machine?

MARGO has little physical resemblance to a human being. A rectangle placed in the middle of the screen represents her face, and indicates her mood by turning smaller and darker as her mood gets worse, or larger and lighter when her mood gets better. Her voice is synthetic and computer-like and can hardly be mistaken for a human voice. Still, she succeeds in evoking the intellectual uncertainty described by Jentsch, possibly by way of repressed experiences described by Freud. Paradoxically, her machinic appearance may be just what facilitates the production of uncanniness by providing the interactor with a neutral interface on which to project her own previous experience of the situations unfolding.

Figure 5: Early Programming *(Sara Roberts 1988) [8]*

Blurring the identities of Mum/machine, the intellectual uncertainty evoked by this work clearly involves the motif of the double, suggesting that the Mum we thought we knew is not Mum after all but someone/something else. The most striking element, however, in my experience of the work is the vaguely nauseous recollection it evokes of Mum's overwhelming presence in a child's life and the lack of agency felt as a result of Mum's omnipotence: the hopeless insight also formulated in Captain Penny's law that whatever you do, "you can't fool Mum."

Lynn Hershman's *Tillie, the Telerobotic Doll* (Figure 6) is another interesting work in which the theme of surveillance functions as a potential source of uncanniness. *Tillie* is an old-fashioned doll exhibited in a gallery space, whose camera eyes can be controlled and looked through from a website, resulting in a form of telepresence. The people controlling *Tillie's* eyes from afar can move her head, and so look around in the gallery space and observe the visitors in the gallery. That is to say, when the visitors feel that the doll is watching them, she really is: or rather *someone* is, someone unknown somewhere in the world.

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From the perspective of the gallery visitors, the situation is not unlike that of Olympia being robbed of her eyes. Objectified by the invisible and unknown gaze of *Tillie*'s possessor they are deprived of their agency as an art audience, of their position as actively gazing, evaluating subjects. Looking through *Tillie*'s eyes, controlling her gaze and the gallery space is hardly an uncanny experience. Being the object for her gaze, not knowing who is looking, might very well be.

Figure 6: Tillie, the Telerobotic Doll
(Lynn Hershman 1995-1998) [10]

The final work I want to examine in this paper is Ken Rinaldo's *Autopoiesis*, commissioned for the afore-mentioned "Alien Intelligence" exhibition at Kiasma/Helsinki in 2000 (Figure 7). *Autopoiesis* is an installation consisting of fifteen grapevine-arms hanging from the ceiling, reactive to each other as well as to the movement of gallery visitors moving in between them. The behaviour of the arms, as experienced by the audience, can be described as swaying towards or away from approaching visitors, or towards or away from each other if no visitors are present, accompanied by an incomprehensible chattering. For me, entering this community of chattering arms for the first time was not a pleasant experience: On the one hand I felt invaded by the creepy arms approaching me, while at the same time slightly insulted by the other, more reserved arms, openly avoiding me. Most of all, though, I felt an overwhelming timidity, as if exposed as a stranger entering a foreign culture in which it is clear to everyone that I don't belong: I don't know the codes or how to behave, and as the language used is incomprehensible to me I can only suspect that their jokes are on me.

The next time I visited the exhibition I was better prepared to interact with the arms, as I'd read about the installation in the exhibition catalogue. Now I knew what the arms were supposed to do, how they were likely to behave, and how I was to behave in order to interact meaningfully with them. Not surprisingly, this time my experience was totally different: instead of feeling intimidated, I soon started to feel affection for the arms. I could easily make them approach me, even follow me around, and if they turned away, I could make them approach me again by trying from a different angle. Now I knew that what I had earlier perceived as incomprehensible chattering probably meant that they were scared – while calmer buzzing would be a sign that they felt well. I also knew now, however, that some of them carried a camera, filming the visitors during the interaction and projecting shadow-like images of us onto the wall. My initial feeling of being watched was perhaps not so paranoid and far-fetched after all. Nevertheless, the timidity felt when I encountered the community of arms for the first time was gone, and didn't return.
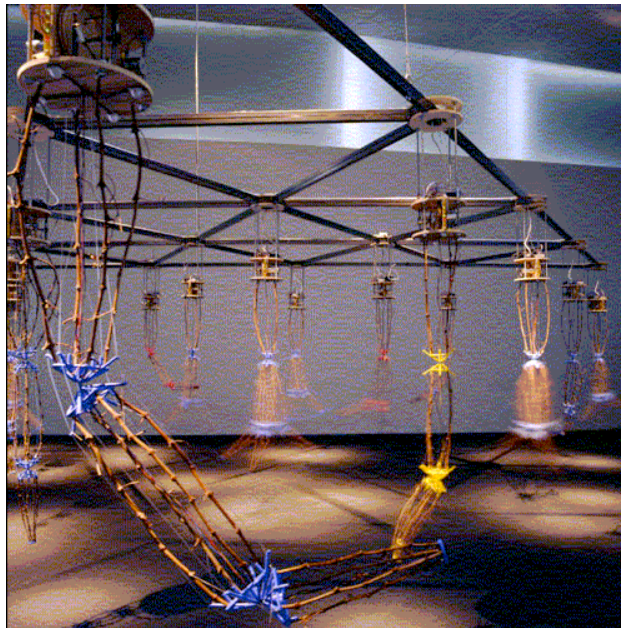
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Figure 7: Autopoiesis *(Ken Rinaldo 2000-2005) [11]*

The uncanniness of the first situation has a parallel in Freud's reported experience of uncanniness when losing his way in the Italian province town. Together these two episodes support another aspect of Jentsch's theory that the uncanny is connected to intellectual uncertainty, "that the uncanny would always, as it were, be something one does not know one's way about in. The better oriented in his environment a person is, the less readily will he get the impression of something uncanny in regard to the objects and events in it" [2:341]. The initial uncanniness evoked by *Autopoiesis* can be explained by our feeling of helplessness when being "robbed of our eyes", that is, deprived of our agency to act and interact meaningfully with our environment, in this case the installation. Thus, in order to perceive *Autopoiesis* as uncanny, I think it is vital that the audience do not quite grasp how the installation functions technically. If we know too well what processes are controlling the movements and sounds, the installation may be experienced as interesting or fascinating, but not uncanny. An initial confusion as to who or what controls the "arms" approaching us, or withdrawing from us, is required in order to experience their behaviour as autonomous expressions of a present consciousness. The other factor contributing to making the situation uncanny is the communication going on between the "arms", from which we are excluded, not comprehending the language being used. It is as if we are entering a room in which everyone knows something about us, discussing it openly but in a language we do not understand. Perhaps they are mocking us, and our obvious lack of control? Turning us into objects of their attention, their position as autonomous, conscious beings is further strengthened, challenging our conviction that such beings do not exist – until we're not quite sure anymore.

Conclusion

The uncanny is a subjective experience, not a quality inherent in any object or situation. Depending on the person experiencing, the behaviour of automata and other animated, lifeless objects may be perceived as uncanny, – or simply as funny, peculiar, or fascinating. Nevertheless, as I hope I have been able to show in this paper, certain objects and situations are more likely to arouse a feeling of uncanniness in their audience than others. Children's automated toys and tamagotchi, as well as W. Grey Walter's tortoises, are examples of animated objects that are usually not experienced as uncanny, even if one may find their behaviour lifelike. Combining the doll motif, well-known from the horror genre for its evocative powers, with a surveillance situation, *Tillie, the Telerobotic Doll* on the other hand represents one of the more prototypical examples of a potentially uncanny encounter in

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new media art. In contrast to Olympia who was robbed of her eyes and thus lost her status as autonomous subject, Tillie gets new pairs every day (as long as she is exhibited, that is). Making encounters with such ambivalent creatures available to us, new media art not only expands our field of aesthetic experience, it also adds an extra dimension to our potential insecurities as to the animism of lifeless objects.

Acknowledgments

Notes

1. "Zur Psychologie des Unheimlichen", 1906.

2. "Der Doppelgänger", 1914

3. http://www.sitegallery.org/exhibitions/view.php?id=36 [23.07.2007]

4. http://www.androidscience.com/theuncannyvalley/proceedings2005/uncannyvalley.html [23.07.2007] Copyright © 2005 Karl F. MacDorman and Takashi Minato

5. http://www.ias.uwe.ac.uk/Robots/gwonline/gwonline.html [23.07.2007] Copyright © University of the West of England, Bristol.

6. http://www.raaf.org/projects.php?pcat=1&proj=5&sec=images [23.07.2007]

7. http://www.stanford.edu/class/history34q/readings/Orlan/Orlan2.html [23.07.2007]

8. http://asuartmuseum.asu.edu/physical/early1.jpg [23.07.2007] My encounter with this work was in 2000, at the exhibition "Alien Intellingence", Kiasma/Helsinki.

9. As described in Christiane Paul's *Digital Art* [8] and documented on the artist's website [3]. Unfortunately I haven't had the opportunity to experience this work myself.

10. http://lynnhershman.com/tillie [23.07.2007] Copyright © 1997 Lynn Hershman

11. http://www.kenrinaldo.com [23.07.2007] Copyright © 2004 Ken Rinaldo

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2. Freud, Sigmund (1990 [1919]): "The Uncanny" ["Das Unheimliche"], *Art and Literature*, Penguin Freud Library Vol. 14, London: Penguin Books.

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