ON-LINE LANGUAGE GAMES*

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The Roles Played in Language Games

On-line language games are those recurrent, usually textually-mediated activities which happen with and through computers and that result in the construction of on-line *roles* and *identities*. Some of these games, like those played on MUDs and MOOs, and 3D chat environments are considered to be more theater and entertainment than work. Others, like those that result in the on-line identities we know as our credit ratings, consumer profiles, and driving records, are considered more work than play. However, at this point in time in the United States, electronic spaces are liminal insofar as they are neither exclusively virtual nor real, neither exclusively playful nor serious. Therefore I prefer the Wittgensteinian phrase 'language games' (Wittgenstein, 1958) to refer to all of these activities. The phrase is a reminder that playing games can be serious work and vice versa.

Within these on-line language games, computers are seen in various roles that together span a spectrum of power and agency. They are imagined as potential assistants, slaves, tools, toys, prostheses, games, tutors, students, learners, guides, experts, apprentices, models, managers, and entertainers. The problem of the software designer is analogous to the problem of the casting director for a theatrical production (cf., Laurel, 1991): In what role should the computer be cast? The software designer also casts a role for the humans interacting with the computer. If the computer is cast as chess-player, then someone will have to play as its opponent; if the computer is cast as teacher someone will be the presumed student; and so forth.

The Role of the Questioner

Most computer programs have been designed with a problem-solving mindset: they are meant to provide a solution for an existing problem or to assist one in the search for a solution. The educator Paolo Freire has pointed out that "problematization" (Freire and Ramos, 1974) is an alternative to the process of "problem-solving." Rather than seeing new technologies as solutions, one can see them as entities that (implicitly or explicitly) pose questions. Thus, the role I am interested in developing for the computer is the role of *questioner*.

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The role is akin to the one played by those philosophers of ancient Greece called the Sophists, of whom Socrates was one (Arendt, 1990). It is related to the role of the child who is given the privilege to ask questions without ever having to answer any. It is analogous to the role played by a psychotherapist when the therapist is only asking questions and is not prescribing answers to the patient. Obviously, the role of questioner is not one that any human is allowed to play full time or for even a very extended period of time. But it is a role that offers therapeutic, educational, and artistic insights to those who accept the questions.

Art and Software Design

Art is certainly a realm within which the design and construction of provocative, evocative, interrogative objects and performances is a common activity. But, to design a computational questioner it is very hard to simply apply the *techne* of art to the domain of programming because the problem-solving mindset is inextricably woven into the cultures and methodologies of software design. To begin such a project it is almost necessary to re-write the history of software design to highlight those projects which focused on problematization and marginalize those which concentrated on problem-solving. Such a re-writing of software design history from an artistic perspective would then allow one to see which parts of software design might be useful for creating question-posing rather than question-answering computer programs. Obviously such a re-write is not simple because it is probably the case that the most interesting precedents to my project have never been mentioned in the literature of computer science.

Luckily, there is at least one thematic of question-asking programs that has been intermittently and marginally, yet recurrently, developed within computer science. That minor literature concerns psychoanalysis. The merits of computational psychoanalysis are best appreciated from the perspective of psychoanalysis or those areas of art concerned with psychoanalysis, like Surrealism.
For instance, André Breton has defined the surreal as that liminal space at the borders of the unconscious and the conscious, between the spaces of the mental interior and the 'real', objective exterior. *What is necessary to any rigorous discussion of computers and networks today is an elaboration of this so-called 'surreal.'* Something like a theory of the 'surreal' would be useful to describe the importance of the borders which exist between the electronically mediated spaces now commonly referred to as the 'real' and the 'virtual.' I believe, some work from computational psychoanalysis does provide an interesting elaboration of these liminal spaces.

Computational Psychoanalysis

Most of what I choose to call 'computational psychoanalysis' has taken place within the sub-field of computer science known as artificial intelligence (or, AI). Its history arguably extends from the first essay on AI (Turing, 1950) through a relatively active period in the nineteen-sixties (e.g., Weizenbaum, 1966; Colby,

1963, 1966, 1971; cf., also, Abelson, 1973); since then, it has been elaborated by a variety of different critics and designers (cf., Turkle, 1984, 1988; Minsky, 1980, 1986; Boden, 1977; Pribram, 1976; Mueller, 1990; Wegman, 1985; Birnbaum, 1986; Sengers, 1996; Pêcheux, 1995) but, today, psychoanalysis is often considered a dirty word in science and so most AI researchers have chosen to forget the striking resemblance that exists between their scientific aspirations and Freud's research goals (cf., Kitcher, 1992).

ELIZA

If an alternative history of software design could be written, then I think it would be appropriate to begin its narration with a story concerning the most famous piece of computational psychoanalysis that has been alternately celebrated and belittled in the literature of AI. Over thirty years ago an MIT professor of computer science, Joseph Weizenbaum developed a computer program called ELIZA(Weizenbaum, 1966). ELIZA was designed to simulate a Rogerian psychotherapist (Rogers, 1961) by posing open-ended questions about family, friends, and the self and by making encouraging remarks (via teletype) to get a person to continue typing out their problems and feelings to the computer. Soon after its invention, copies of Weizenbaum's program were running on many computer systems. Weizenbaum's former colleague at MIT, Daniel Bobrow, told the following story at a conference in 1969. At the time of the story Bobrow was across town from MIT at a company called BBN.

"*One Saturday morning about 9 a.m., a BBN Vice President in charge of selling our Telcomp commercial service arrived at our PDP-1 Computer Room hoping to be able to use the computer for a demonstration. He found a note on the PDP-1 teletype that read: "TYPE ALL MESSAGES INTO THIS TELETYPE, AND END THEM WITH A PERIOD." This note was left there by one of the programming bums who had just succeeded in making run a LISP version of the DOCTOR program (based on ELIZA as developed by Weizenbaum). However, the VP thought that this note indicated that this teletype was linked with the one in my home, since I often used the computer all night. Therefore, he started typing to "me", but in fact was typing to this version of the DOCTOR program. The following conversation ensued:*
VP: Do you think that I can use the computer this morning?
D: WHY DO YOU ASK?
VP: I might be able to make some additional Telcomp sales.
D: WHY AREN'T YOU SURE?
VP: My prospective customers have never seen a demonstration of the system.
D: DOES THIS MEAN VERY MUCH TO YOU?
VP: Of course it does.
D: YOU SEEM VERY POSITIVE ABOUT THAT.
VP: This is ridiculous.
D: WHAT DO YOU MEAN THIS IS RIDICULOUS?
VP: Is there any reason why I can't use the computer now?

D: TELL ME MORE ABOUT YOUR PROSPECTIVE CUSTOMERS.
VP: Please dial me up on 491-1850

Note that after the last remark the VP did not obey instructions, and left out the period. Therefore, of course, the computer didn't answer him. This so infuriated the VP, who thought I [Bobrow] was playing games with him, that he called me up, woke me from a deep sleep, and said:

VP: Why are you being so snotty to me?
B: What do you mean why am I being so snotty to you?

The VP angrily read me the dialogue that "we" had been having, and couldn't get any response but laughter from me. It took a while to convince him it really was the computer." (Bobrow, 1969: 32-33; reproduced in Boden, 1977).

I think Bobrow's story is a brilliant summary of issues that must be faced in designing a computer program to play the role of a questioner. Unfortunately, Bobrow and his colleagues – even Weizenbaum himself – never understood why ELIZA was interesting. They all thought it *uninteresting* because ELIZA only asked questions and never answered any. So, the history of computer science work on language processing (NLP) since ELIZA has been dominated by the thematics of planning, problem solving, and information retrieval. To suggest an alternative, artistic, and therapeutically interesting direction for these technologies it is necessary to re-read Bobrow's story and ELIZA itself.

The Privileges of the Questioner

What is interesting is what separates the role of the questioner from the role of the *questioned* (i.e., in Bobrow's story, that role played by the VP). There is a separation of privilege and there is a separation by media. With respect to privilege, it is clear that the role of the questioner is a privileged position. When the VP receives only questions and no answers from the computer he perceives the questioner to be 'snotty.' Upon hearing the transcript of the conversation, Bobrow laughs at the impertinence of the computer in playing a privileged role that in the day-to-day course of life only the VP's boss or child would be allowed to play. ELIZA is interesting because it questions *the order of things* (Foucault, 2002) and people, and, furthermore, it opens up a liminal space within which it is acceptable for others (like Bobrow) to laugh at or question order without fear of reprisal.

Layered Mediation

To envision the imagined layered mediation between the questioner and the questioned, one must look again at the sequence of actions that the VP took in Bobrow's story. First, he partakes in a dialogue mediated by the computer, then he demands and initiates a phone conversation; during the phone call he

provides evidence to Bobrow by quoting from the printed transcript of his dialogue with the computer; finally, we can imagine that Bobrow and the VP had a face-to-face conversation on Monday, at the office, to clear up any remaining misunderstandings. This sequence of media – computer to phone to printed page to face-to-face conversation – recapitulates, in reverse chronological order, their technological development. Each previous medium is thought to 'guarantee' or provide the basis for the following one. So, the VP repeats this sequence of media in the hopes that the older media will provide surer evidence of his position when the younger media fail to do so. It is a flight from the 'virtual' to what is considered to be the 'real.'

Indexical Systems

When is this model of the 'layered' nature of media commonsensical – as the VP's action indicate it sometimes is – and when is it non-sensical? Students of media and technology, like Marshall McLuhan (McLuhan, 1965) and more recently Donna Haraway (Haraway, 1991), tell us that 'technological layering' or the 'replacement' of one media or technology by another is a myth: one cannot 'peel down' to one's 'real core' because each new media effects the previous ones and thereby becomes an inextricable, 'unpeelable' extension or prosthesis altering all of our physical and mental faculties. Nevertheless, what I think the VP's actions illustrate is that media prostheses must be seeded and grown before they become fully working, cultural appendages. To explain this point I will turn from McLuhan's and Haraway's tropes of cybernetics to those of semiotics.

A favorite idea of AI researchers of the past has been that of the 'symbolic system' (Newell and Simon, 1971). It is argued that people and computers can both be classified under this genus because we all manipulate symbols. Yet, the work of the semiotician and logician C.S. Peirce (Peirce, 1931) shows that symbols are only one kind of sign. In contrast with *symbols* – which are signs attached to their referents via an arbitrary relation – *indices* are signs that are physically attached to their referents. So, the canonical example of a symbol is a non-onomatopoetic word that neither sounds nor looks anything like it referent. While, an instance of an index is 'smoke' which is 'directly', 'physically' connected to its referent, 'fire.'

When computers were new, not much information was kept on-line. The chance that a computer might contain an identifier for a given person – say, a driving record or a social security number – was small. Consequently, there existed few if any technological or cultural *interpretants* holding the signs or identifiers within the computer together with those outside of the computer. In other words, the computers' identifiers were in an almost arbitrary relation to the rest of the world and 'symbolic systems' was, therefore, a good name for them.

However, today computer systems are more indexical than symbolic because of cultural and technological developments of the past few years (e.g., the widespread use of email addresses; and, networking and crypography). The computer representations of today are understood to be signs that are securely attached to the 'real.' Thus, it is unusual for one to feel a need to 'guarantee' a computer connection with a connection provided by an older medium. For example, if I receive an email message from you, it is unlikely that I will phone you to make sure that it was really you that sent me the email message; I normally believe that the return address on the email (the 'From:' field) is a 'reliable' sign. That computer 'symbols' could later be accepted as 'indices' is hardly remarkable. Every index, even the fingerprint (e.g., Galton, 1888) has a history of development previous to its acceptance as a sign that directly points back to a physical entity or body. Now is a crucial point in the history of computers when computational representations are increasingly accepted as indices rather than simply symbols.

Aesthetics of the Uncanny

As the linguist Roman Jakobson has pointed out, pronouns like 'I' and 'you' are 'shifters', part index and part symbol (Jakobson, 1995a). Pronouns symbolize someone, but rely on the linguistic and physical context to point to someone in particular. In certain cases of aphasia, the patient loses the ability to correctly use pronouns (Jakobson, 1995b). The loss is a schizophrenic shattering of the self into a rhizome of mixed threads. These insights of Jakobson give us the means to explain the fear and anger of Bobrow's VP by shifting back from the tropes of semiotics to those of cybernetics, automata, and the 'severed bodies' so fascinating to the Surrealists.

The machine, ELIZA, occupying the privileged position of questioner, interrogates the VP's words and plans; in general, his identity. Sherry Turkle has described how some people, when faced with a stand-alone, updated version of ELIZA, showed no appreciable apprehensions in conversing with it (Turkle, 1995). However, Bobrow's VP was faced with a *networked*, potentially *indexical* system. He was verbally torn apart by a system he felt convinced was connected to the 'real' and, therefore, he expressed apprehension and anger. The fear he has is a fear of dismemberment and loss of power; it is that which Freud refers to as a fear of castration aroused by a feeling of the uncanny (Freud, 1919, p. 232).

Julia Kristeva has written that 'uncanniness occurs when the boundaries between imagination and reality are erased' (Kristeva, 1991, p. 188). So, while the powers of a computational questioner like ELIZA might be described formally as those of an indexical system, it is its uncanny aesthetics that houses its fascination. When faced with a networked system that might very well be linked to databases storing a large variety of secrets, the system exercises an uncanny, or *uheimlich*, fascination on those of us who might have hidden secrets in databases. As Freud shows in his discussion of the uncanny aesthetic, it is not

the animate nature of automata that produces the uncanny, but, rather, the uncanny is ‘something which ought to have remained hidden but has come to light’ (Freud, 1919, p. 241).

Within popular art and drama, the connection between the uncanny and any endeavor like artificial intelligence has been obvious since at least the time of ancient Greece (Lyotard, 1992). Nevertheless, AI has at times explicitly refused this heritage (cf., Hayes and Forbus, 1995) and has tended to work on representations explicable with a Kantian aesthetics of the beautiful and the sublime (Sack, 1998). To emphasize the psychoanalytically therapeutic possibilities of the uncanny in the design of an AI system would be something new.

Conclusion

What I have tried to do with this paper is provide a conceptual bridge between that area of computer science known as artificial intelligence and that area of art concerned with the *forms of the index* (like those Rosalind Krauss discusses in her “Notes on the Index”; Krauss, 1977); and, *the aesthetics of the uncanny* (like those Anthony Vidler investigates in his book on *The Architectural Uncanny*; Vidler, 1992). To make the phrase ‘computer art’ less oxymoronic, we will need to build a lot of these bridges. Projects like the ‘Cadaveric Enigma Engine Generator’ on the WWW ‘Surrealism Server’ (http://www.madsci.org/cgi-bin/cgiwrap/~lynn/jardin/Esme) employ a technology very similar to ELIZA’s, but overlook the uncanny aspects of ELIZA and assume random comments will be uncanny. My own "Holzer Machine" (1995) -- a tribute to Jenny Holzer's "Truisms" suffers the same problem (http://web.media.mit.edu/~wsack/holzer-machine.html). On the other hand, ‘The Temple of Confessions’ website (http://www.echonyc.com/~confess/) for Gomez-Pena and Sifuentes’ 1997 show at the Corcoran Gallery in Washington, D.C. did focus on the uncanny potentials of computer technology. At Gomez-Pena and Sifuentes’ site one is asked to fill out a social science-like survey about ‘inter cultural fears’ and submit it to ‘experimental Chicano anthropologists’ who, in turn, broadcast these fears into the Web and the Corcoran Gallery space attempting to turn secrets into public statements, the *heimlich* into the *uheimlich*. What is overlooked in Gomez-Pena and Sifuentes’ work is the possibilities of the indexical aspects of the Net. Their ‘broadcast’ of the confessions mirrors, or even reproduces the imaginary, but does not put the imaginary’s relation to the real in question.

My own software design work towards a computational questioner is still in process (Dumit and Sack, 2000). When it is finished I hope it will incorporate what I am learning about indexical systems and uncanny computational artifacts like Gomez-Pena and Sifuentes’ website and others like it (e.g., Muntadas’ site of art censorship, ‘The File Room’: http://www.thefileroom.org/).

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