

# (Anti-)anthropomorphism and interface design

CATTW 2002, 27 May

**Randy Harris, Paula Loewen**

Department of English  
University of Waterloo  
Waterloo ON N2L 3G1

We have a simple argument: that it is pointless to try to avoid anthropomorphism in the design of user interfaces because users will orient toward them as if they were people anyway. The argument is unexceptional and merely draws together a few noteworthy sources from rhetoric, philosophy, and interaction design. We claim no novelty. Our contribution is in (1) stitching them together, and (2) opposing them to an influential position in graphic-user-interface theory and practice.

Indeed, we only bother to make the argument because that position—a hostility toward anthropomorphism—*is* so influential. And because it's so wrong.

## **The case against anthropomorphism**

We'll start with the case we oppose, championed by Ben Schneiderman in his *Designing the user interface*, now into its third edition and widely regarded as The Orthodoxy of interface design. It's more innuendo than argument, but it goes like this:

There is a great temptation to have computers “talk” as though they were people. It is a primitive urge that designers often follow, and that children and many adults accept without hesitation. ... Children accept human-like references and qualities for almost any object, from Humpty-Dumpty to Tootle the Train. Adults reserve the

anthropomorphic references for objects of special attraction, such as cars, ships, or computers. (380)

This primitive, childish urge is bad for user interfaces because, well, because computers are not people:

Attributions of intelligence, autonomy, free will, or knowledge to computers can deceive, confuse and mislead users. The suggestion that computers can think, know, or understand may give users an erroneous model of how computers work and what the machines' capacities are. Ultimately, the deception becomes apparent, and users may feel poorly treated. (ibid).

We resist the urge to analyze the conceptual repetitions, the strategic modal verbs, the guilt-by-association-with-children line, and the complete lack of evidence—all of which indicate how shallow the case is—and move directly to an epitome of the argument, which resembles a *modus ponens*:

1. People have a tendency to treat non-human things as human-like.
2. One of the class of things people perpetrate this tendency on is computers.
3. Computers are not human.
4. Therefore, to support this tendency in computer design is set people up for disappointment, and ill-feeling toward the computer.

Schneiderman is certainly right about two things: anthropomorphism is primitive, and it is pervasive. However, we see both of these characteristics as highly advantageous.

### Anthropomorphic primitiveness

On its primitivism: it goes back at least as far Homer, which is to say, as far back as we have evidence. Here is Aristotle on Homer's "common practice of giving metaphorical life to lifeless things":

all such passages are distinguished by the effect of activity they convey. Thus,

- Downward anon to the valley rebounded the boulder *remorseless*;  
and
- The (bitter) arrow *flew*; and
- Flying on *eagerly*; and
- Stuck in the earth, still *panting* to feed on the flesh of the heroes;  
and
- The point of the spear *in its fury* drove full through his breastbone.

In all these examples the things have the effect of being active because they are made into living beings; shameless behaviour and fury and so on are all forms of activity. *Rhetoric* 1411<sup>b</sup>

It is significant that Homeric verse is the residue of a highly oral tradition, a pre-literate mode of preserving knowledge which taps more directly into cognitive dispositions than, say, academic prose. Metaphor, metonymy, repetitio, antithesis—the figurative blueprints that Homeric structures are built to—all correspond directly to well known cognitive principles. And, as Aristotle points out, anthropomorphism is a species of metaphor, a particular way of translating thisness into the thatness of being human. Another thing Aristotle says about metaphor is that it puts the unfamiliar *this* into the frame of a familiar *that* so we can get a purchase on it, so we can understand it better. This point is best understood by way of those big metaphorical structures called *analogy*: comparisons are a fundamental—in fact, primitive—tool of education.

So: anthropomorphism *is* primitive, it taps into cognitive structures, and it helps us to understand. That sounds pretty good to us.

### Anthropomorphic pervasiveness

On pervasiveness, we yield the floor to Daniel Dennet, a contemporary philosopher, while he catalogues how widely we use anthropomorphism to reason about non-human actors:

The strategy ... works on most other mammals most of the time. For instance, you can use it to design better traps to catch those mammals, by reasoning about what the creature knows or believes about various things, what it prefers, what it wants to avoid. The strategy works on birds, and on fish, and on reptiles, and on insects and spiders, and even on such lowly and unenterprising creatures as clams (once a clam *believes* there is danger about, it will not relax its grip on its closed shell until it is *convinced* that the danger has passed). It also works on some artifacts: the chess-playing computer will not take your knight because it *knows* that there is a line of ensuing play that would lead to losing its rook, and it does not *want* that to happen. More modestly, the thermostat will turn off the boiler as soon as it comes to *believe* the room has reached the desired temperature.

The strategy even works for plants. In a locale with late spring storms, you should plant apple varieties that are particularly *cautious* about *concluding* that it is spring--which is when they *want* to blossom, of course. It even works for such inanimate and apparently undesigned phenomena as lightning. An electrician once explained to me how he worked out how to protect my underground water pump from lightning damage: lightning, he said, always *wants* to find the best way to ground, but sometimes it *gets tricked* into taking the second-best paths. You can protect the pump

by making another, better path more *obvious* to the lightning.  
(1997, 65)

This passage concludes our counter-argument against anti-anthropomorphism. What Dennet adds is that anthropomorphism is frequently a very successful strategy.

As Schneiderrman points out, one of the artefacts that people apply this strategy to is their computers, a line that is developed extensively by Clifford Nass and Byron Reeves' book, *The media equation: How People Treat Computers, Television, and New Media Like Real People and Places*. A book documents a series of investigations and analyses that all show people to talk and think about their computers, and other information devices, as social actors.

### Bad design

Schneiderman's big concern about people applying the anthropomorphic strategy to computers is that it is not always successful. *That* is his big worry. But the problem, as we see it, has nothing to do with anthropomorphism. People don't get frustrated at their computer systems because they don't turn out to be humans after all. They get frustrated with them because they don't turn out to be very good after all. And—Schneiderman is right—one of the biggest reasons that they don't turn out to be very good is that they don't act enough like humans. But this is a limitation of *design*, not of hardware, and could be rectified by a more fully realized notion of anthropomorphism.

Take the ATM, an extremely common, and frequently aggravating computational device; to the extent that it is no aggravating, it's because we have acclimatized to its stubborn non-humanness.

They're all a bit different, but the TD-CanadaTrust ATMs, which are in fact celebrated for their usability, offers you the choice of carrying out any

transaction—bill payment, deposit, withdrawal, whatever—from either your savings account or your chequing account. Fine, I suppose, except that if you only have one account, and aren't really sure what it's called you can now press the wrong button. If you do press the wrong button, the machine stops the whole transaction, kicks you out, gives you back your card, and, if you have the stamina, you have to start all over again: put in the card, key in the PIN, and so on. Now, it must *know* that you have only one account, or it wouldn't punish you for trying to access a second one. But if it knows you have only one account, why does it give you the option to select between two, thereby *introducing* the possibility of an error where none would otherwise have existed?

Does that sound like the way a human would act in similar circumstances? Maybe. A malicious human might. Or one who made an error, for which you would rightly expect an apology. What would you say about a bank clerk who asked you to choose between two accounts, when you had only one, and then forced you to leave the building and come back in again, and go to the back of the line, if you got it wrong? Whatever you said, it wouldn't be pretty, and it wouldn't be complimenting him on how adept he was as a social actor.

Alan Cooper, an interface designer who has had similar problems with his ATM, puts it this way:

The ATM has rules that must be followed, and I am quite willing to follow them, but it is unreasonably computer-like to fail to inform me of them, give me contradictory indications, and then summarily punish me for innocently transgressing them. This behavior—so typical of computers—is not intrinsic to them. Actually nothing is intrinsic to computers: they merely act on behalf of their software, the program. And programs are as malleable as human speech. A person can speak rudely or politely, helpfully or sullenly. It is as

simple for a computer to behave with respect and courtesy as it is for a human to speak that way.

The design solution to this problem, which is highly typical of software behaviour, is not to make the ATM *appear* less like a human, but to *behave* more like a human, a nice human, so that we can apply the anthropomorphic strategy to it, as users—which millennia of rhetorical theory, lots of contemporary research, and common sense, says we are going to do anyway—and have it work.

## Conclusion

To summarize, then:

People routinely orient themselves towards much of the world, and especially complex organisms or artefacts in the world, as if they were social actors, as if they were human.

Schneiderman, and the anti-anthropomorphic contingent he represents, say this is a weakness that can corrupt interfaces by breeding unrealistic expectations.

But the problem is exactly the reverse: computers don't behave enough like humans, which is not the fault of their circuits but of their coding. They need to be better designed.

Technical communicators, and teachers of technical communicators, must not fall into lock-step with anti-anthropomorphism, but help to reverse the trend in the way that has become so familiar to our discipline: by taking the user's side and arguing her case.

**Work cited**

Aristotle. *The Rhetoric and the Poetics*. Translated by Rhys Roberts (*Rhetoric*) and Ingram Bywater (*Poetics*). New York: The Modern Library.

Cooper, Alan. 1999. *The inmates are running the asylum: Why high-tech products drive us crazy and how to restore the sanity*. Indianapolis, IN: SAMS.

Dennet, Daniel. 1997. True believers: The intentional strategy and why it works. In *Mind design II: Philosophy, psychology, and artificial intelligence*. Edited by John Haugeland. Cambridge, MA: The MIT Press.

Nass, Clifford and Byron Reeves. 1998. *The media equation: How People Treat Computers, Television, and New Media Like Real People and Places*. Cambridge: Cambridge University Press.

Schneiderman, Ben. 1998. *Designing the user interface: Strategies for effective human-computer interaction*. Third edition. Reading, MA: Addison-Wesley.