

Pictures Entertainment, an arm of the Japanese consumer electronics giant. The *Jeopardy* executives, led by a canny negotiator named Harry Friedman, weren't about to let IBM use their golden franchise and their millions of viewers on its own terms. Over the years, the two companies jostled over the terms of the game, the placement of logos, access to stars such as Ken Jennings and Brad Rutter, and the writing of *Jeopardy* clues. They even haggled over the computer's speed on the buzzer and whether IBM should take measures to slow it to a human level. These disagreements echoed until the eve of the match. At one point, only months before the showdown, *Jeopardy*'s executives appeared to be on the verge of pulling the plug on the entire venture. That would have left IBM's answering computer, the product of three intense years of research, scrounging for another game to play. This particular disagreement was resolved. But the often conflicting dictates of promotion, branding, science, and entertainment forged a fragile and uneasy alliance.

The *Jeopardy* project also faced harsh critics within IBM's own scientific community. This was to be expected in a field—Artificial Intelligence—where the different beliefs about knowledge, intelligence, and the primacy of the human brain bordered on the theological. How could there be any consensus in a discipline so vast? While researchers in one lab laboriously taught machines the various meanings of the verb “to do,” futurists just down the hall insisted that computers would out-race human intelligence in a couple of decades, controlling the species. Beyond its myriad approaches and outlooks, the field could be divided into two camps, idealists and pragmatists. The idealists debated the nature of intelligence and aspired to build computers that could think conceptually, like human beings, perhaps surpassing us. The pragmatists created machines to carry out tasks. Ferrucci, who had promised to have a television-ready computer by early 2011, fell firmly into the second camp—and his team attracted plenty of barbs for it. The *Jeopardy* machine would sidestep the complex architecture of the brain and contrive to answer questions without truly understanding them, “It's just another gimmick,” said Sajit Rao,

a professor in computer science at MIT who's attempting to teach computers to conceptualize forty-eight different verbs. “It's not addressing any fundamental problems.” But as Ferrucci countered, teaching a machine to answer complex questions on a broad range of subjects would represent a notable advance, whatever the method.

IBM's computer would indeed come to answer a dizzying variety of questions—and would raise one of its own. With machines like this in our future, what do we need to store in our own heads? This question, of course, has been recurring since the dawn of the Internet, the arrival of the calculator, and even earlier. With each advance, people have made internal adjustments and assigned ever larger quantities of memory, math, geography, and more to manmade tools. It makes sense. Why not use the resources at hand? In the coming age, it seems, forgoing an effective answering tool will be like volunteering for a lobotomy.

In a sense, many of us living through this information revolution share something with the medieval monks who were ambushed by the last one. They spent years of their lives memorizing sacred texts that would soon be spilling off new-fangled printing presses. They could have saved lots of time, and presumably freed up loads of capacity, by archiving those texts on shelves. (No need to discuss here whether the monks were eager for “free time,” a concept dangerously close to Sloth, the fourth of the Seven Deadly Sins.) In the same way, much of the knowledge we have stuffed into our heads over the years has been rendered superfluous by new machinery.

So what does this say about Ken Jennings and Brad Rutter, the humans preparing to wage cognitive war with Watson? Are they relics? Sure, they might win this round. But the long-term prognosis is grim. Garry Kasparov, the chess master who fell to IBM's Deep Blue, recently wrote that the golden age of man-machine battles in chess lasted from 1994 to 2004. Before that decade, machines were too dumb; after it, the roles were reversed. While knowledge tools, including Watson, relentlessly advance, our flesh-and-blood brains, some argue, have stayed more or less the same for forty thousand years, treading