

GOLDEN GLOBE NOMINATION MICHAEL FASSBENDER – BEST ACTOR

"THE MOST PROVOCATIVE
AND COMPELLING FILM
OF THE YEAR"
EMPIRE

"ONCE SEEN, NEVER FORGOTTEN"



DAVID EDWARDS, DAILY MIRROR

"MESMERISING"
TIME OUT

"OUTSTANDING"
THE GUARDIAN



"SEARINGLY BRILLIANT
AND UTTERLY UNMISSABLE"
TATLER



"MICHAEL FASSBENDER GIVES
A SCORCHING PERFORMANCE"
DAILY MAIL



MICHAEL FASSBENDER
SHAME
IN CINEMAS FRIDAY

SHAMEUK

CULTURE

'Elites that are open and based on merit can be nurturing'

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Brockman (1969), taking information theory – the mathematical theory of communications – as a model for regarding all human experience. A main theme has continued to inform my work over the years: new technologies = new perceptions.

An incident from those years stands out. During an evening at dinner, Cage reached across the table and handed me a copy of *Cybernetics* by Norbert Wiener. Fast forward two years. Around 1967, I spent two days with Stewart Brand while he was assembling the first edition of the *Whole Earth Catalog* and we sat and read the book together, underlining as we went along. Central to our interest was the notion of "feedback", the non-linear relationship of input to output. It was apparent that the ideas in cybernetic theory were far more important than the applications for which the mathematical descriptions were designed.

Stewart and I have been in touch regularly since then – a 45-year connection.

JN Was it difficult to come up with Edge's 2010 question, about the internet?

JB Every August, I begin a conversation with three of the original members of Edge – Stewart, Kevin Kelly and George Dyson. Eventually, I came up with the idea of asking how the internet is affecting the scientific work, lives, minds and reality of the contributors. A big consideration of this question is the difference between "we" and "you". When people respond to "we" questions, their words tend to resemble expert papers, public pronouncements or talks delivered from a stage. "You" leads us to share specifics of our lived experience. The challenge then is not to let responses slip into life's more banal details.

JN I was struck by something that one respondent, Evgeny Morozov, said about his fear of a chasm opening "between the disengaged masses and the overengaged elites". The elites, he goes on, "continue thriving in the new environment, exploiting superb online tools for scientific research and collaboration" etc. Actually, it's clear that many – most? – of your respondents are, par excellence, members of those elites. That's not a criticism, but it might mean that a casual reader could come away from the book thinking that public engagement with the internet and its significance is rather more elevated and intelligent than is actually the case.

JB The problem with a discussion that uses the word "elites" is that the word is automatically perceived as a pejorative. But that's not how I feel about it at all. Elites are a problem if they're closed and exclusive. Elites that are open, inclusive and based on merit can be nurturing. Also, members of elites give one another permission to be great. One example is the Beat poets. Another example is the mix of people who created Silicon Valley.

While Edge is a read-only site, the cast of characters contributing to the various projects is ever-changing and inclusion is by recommendation of members of the community. That said, Edge is not for everybody. It helps to know some stuff. But one thing you won't find in the responses is arrogance. The site stands or falls on the quality of the questions it asks.

In terms of this particular question – "Is the internet changing the way you think?" – there's the question of people having skin in the game. The contributors to Edge are what I call third-culture thinkers or intellectuals. Not only are they focused on science-



minded pursuits based on evidence and empiricism, they are also public communicators, reaching out to the public by means of their books, lectures, etc. They live by their wits, and doing so in the changing times of the digital age is a challenge. Their concerns are very different than, say, the casual user, who has signed up for a social network and by default becomes the product whose private information is sold to advertisers.

JN In a way, the shadow of Marshall McLuhan looms over the conversation.

Two of his aphorisms in particular – "The medium is the message" and "We shape our tools and later they shape us" – seem particularly apposite. The first captured the thought that what's important about a medium is not the content of the messages it carries but what the medium is doing to those who use it. That seemed to me to emerge from lots of the responses (and not just Nick Carr's, either). And the meme about our tools shaping us surfaced again and again in the essays.

JB McLuhan is certainly central to

INSIDE TRACK Edge members share their opinions about

MARTIN REES

Ex-president of the Royal Society,
professor of cosmology and astrophysics,
University of Cambridge

The internet enables far wider participation in front-line science; it levels the playing field between researchers in major centres and those in relative isolation, hitherto handicapped by inefficient communication. It has transformed the way science is communicated and debated. More fundamentally, it changes how research is done, what might be discovered and how students learn.

JON KLEINBERG

Professor of Computer Science, Cornell
University

When I first used an Internet search engine in the early 1990s, I imagined myself dipping into a vast, universal library, a museum vault filled with accumulated knowledge. The fact that I shared this

museum vault with other visitors was something that I knew in principle, but could not directly perceive.

When I go online today, all those rooms and hallways are teeming. What strikes me is the human texture of the information. I've come to appreciate the way the event and the crowd in fact live in symbiosis, each dependent on the other – the people all talking at once about the event, but the event only fully comprehensible as the sum total of the human reaction to it. The cacophony might make sense, and it might not.

HELEN FISHER

Research professor, Department
of Anthropology, Rutgers University

The internet is a return to yesteryear; it simply allows me (and the rest of us) to think and behave in ways for which we were built long, long ago. Take love. We think it's natural to court a totally unknown person in a bar or club. But it's far more natural to