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## Technological determinism

Posted by Inca - 16-05-2008 00:24

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I should really revive my old New Yorker thread--basically just me talking to no one about good pieces in the magazine, and providing links when possible. But until then, here's one essay in particular that I think merits an audience--Jill Lepore on technological history.

The New Yorker pulled off a big coup (in my eyes, at least) when they got Lepore to write reviews of history books, usually about once a month or so, and I think this one is her best so far. It's a review of *The Power Makers: Steam, Electricity, and the Men Who Invented Modern America* by Maury Klein. But more than just a review, Lepore explores the tendencies of technological determinism, while eviscerating the book under review (really, from that title I would not expect it to be good).

Here's a taste:

Historical narratives in which machines drive history look like this: x machine produces y kind of society. "The hand-mill gives you society with the feudal lord; the steam-mill, society with the industrial capitalist," Karl Marx wrote, in "The Poverty of Philosophy," in 1847. Lewis Mumford, in his meditative 1934 "Technics and Civilization," made this swap: "The clock, not the steam-engine, is the key-machine of the modern industrial age." For Klein, Edison flipped the switch on "a new era in American life," the age of abundance.

This logic is usually called "technological determinism," and is something that Mumford himself, during the course of his career, repudiated and vigorously attacked as "a radical misinterpretation of the whole course of human development." Precise definitions are hard to come by, but in its purest form technological determinism looks a lot like the nineteenth-century idea of progress and holds that machines are the most important force in human history, that they follow a fixed path through set stages, and that they bring about social, political, cultural, and economic change. The printing press led to the scientific revolution. The cotton gin carried slavery to the American West. The automobile drove city dwellers to the suburbs. The Pill gave birth to the sexual revolution. Surgical strikes numbed us to the agony of war.

These statements have a ring of truth; they're useful, insightful, and worth considering. And, at first glance, they're pleasing: you can picture the steam engine, the clock, the light bulb, the printing press, the cotton gin, the Pill, the automobile. You find yourself silently nodding in agreement. Technology changes our lives all the time, in little ways and big ways, sometimes profoundly, very often for good, and sometimes for very great good. Really, it's not such a big leap to believe that technology drives change, and drives history. Asked to guess which is the more powerful force in history—gadgets you can tinker with or wispy, diaphanous ideas—most people would put their money on gadgets. And why not? The printing press versus, say, predestination isn't really a fair fight, unless you've got a lot of time to think about it, and to read books—printed on a printing press. In some parts of these United States, daily life is like living in a museum dedicated to the proposition that technology is destiny.

But what if x isn't all that triggers y, or even what mostly does; what if it just looks that way, because we are living y? It's easy to forget that some of these y's started long before the x's, suburbs before automobiles. And none of the x's tell the whole story; the Pill, while not a small thing, wasn't everything. Statements like "The light bulb ushered in the age of abundance" employ a grammar suspiciously like that of advertising copy. Viagra will save your marriage. Electronic voting will restore faith in American democracy. The iPod will make you groovy.

Technological determinism isn't so groovy anymore, at least among many historians of technology, who, while granting the enormous importance and influence of technological change, do not generally find it to be deterministic. The American cultural historian Leo Marx once argued that the Second World War represented the high-water mark of technological determinism in the American imagination. The plot of the "historical romance called Progress," he believed, began to fall apart at Hiroshima and unravelled still more every time modernization theory failed in practice. Since then, the word "progress" has become increasingly freighted, at least among historians of technology. "Progress: Fact or Illusion?" was the title of a 1996 collection of essays that Marx edited with his colleague Bruce Mazlish. In "A Culture of Improvement: Technology and the Western Millennium" (M.I.T.; \$39.95), Robert Friedel tells a story that starts with a plow carving up the earth and ends with Apollo landing on the moon. The idea that "things could be done better" holds his analysis together, but, as he is at pains to clarify, "this is not the same as a faith in progress or the belief that the necessary trajectory of history or human experience was upward."

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## Re:Technological determinism

Posted by ursus arctos - 16-05-2008 09:43

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Excellent. I look forward to that issue arriving over here.

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To continue the New Yorker thread, I just started this profile of a "molecular gastronomy" chef in Chicago who is suffering from Stage IV cancer of the tongue, and can't really taste any of his exotic creations.

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## Re:Technological determinism

Posted by Wyatt Earp - 16-05-2008 09:56

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I'm never quite sure how historians make up their minds about causal hypotheses. I mean, it's not as if you can rerun the experiment without cars or printing presses and see if things turn out similarly, or run it again with cars and printing presses but without the publication of Das Kapital and see if they turn out different.

In the circumstances, you'd expect endless irresolvable disputes among differing "schools of thought", which is, let's be honest, pretty much what we do see.

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## Re:Technological determinism

Posted by ursus arctos - 16-05-2008 10:23

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Exactly.

And one often makes one's mark in the profession by taking apart the interpretations favoured by the previous generation (often, but not always, on the basis of new primary sources that they either lacked access to or ignored).

It's why I've never liked the US classification of history as one of the "social sciences"; there is desperately little "scientific" about the discipline.

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## Re:Technological determinism

Posted by Wyatt Earp - 16-05-2008 10:45

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Has "anymore", as a single word, become standard in US English?

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## Re:Technological determinism

Posted by ursus arctos - 16-05-2008 11:08

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Yes (if the New Yorker style guide allows it; it has to be mainstream). I would say that in general we are somewhat more likely to use compounds of that sort than you are.

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## Re:Technological determinism

Posted by Antonio Gramsci - 16-05-2008 13:16

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Wait a minute, wait a minute.

In the US, history....is a SOCIAL SCIENCE?

How the hell did that happen?

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## Re:Technological determinism

Posted by Inca - 16-05-2008 13:23

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Well, it's not a social science everywhere. At UCLA, the history department is in the School of Social Sciences, but at UC Irvine, it's considered one of the humanities.

I'm sure an explanation of how it became considered to be a social science is in Peter Novick's "That Noble Dream", but I sold my copy of that. Probably has something to do with the professionalization of history and the leaders of American history departments believing that history could be written wie es eigentlich gewesen ist.

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## Re:Technological determinism

Posted by Antonio Gramsci - 16-05-2008 13:40

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I've often wondered what would happen if an institution somewhere decided to go totally po-mo and merge the English and history departments into a single "Department of Narrative", with fiction and non-fiction sections.

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## Re:Technological determinism

Posted by Inca - 16-05-2008 13:50

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UC Irvine probably considered it in the 80s.

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## Re:Technological determinism

Posted by ursus arctos - 16-05-2008 13:57

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The significant German influence on the profession in the late 19th and early 20th century certainly had a lot to do with it.

And Gramsci, I bet you could sell that concept to Bard, if they aren't doing it already. "History and Literature" faculties at places like my old pile of bricks are often not far off from that model.

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## Re:Technological determinism

Posted by Inca - 16-05-2008 14:04

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And coming from the other direction, UC Irvine's highly respected writing program (and English depts at other schools) have added "creative nonfiction" classes.

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## Re:Technological determinism

Posted by ursus arctos - 16-05-2008 14:32

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I almost got thrown out of the department for trying that in 1978 . . .

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## Re:Technological determinism

Posted by Reed of the Valley People - 16-05-2008 15:29

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I reckon history belongs with the social sciences even if it isn't, by itself, a social science. To understand a lot of history, you need to know something about economics and vice versa. Same with sociology and anthropology.

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## Re:Technological determinism

Posted by Antonio Gramsci - 16-05-2008 16:11

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The bits of sociology that aren't total drivel are definitely part of the social sciences because they actually use data and have testable hypotheses and the like. Even if the mathematical constructs they use are often about 30 years behind what the more mathematical end of the social sciences (economists in particular) are using.

This is also true of some parts of political science (the only social science so insecure about itself that it has to put the word "science" in its actual name), though most of this, too, belongs in the department of narrative.

Anthropology is a tougher one. I've not read much, but my impression is that it is less scientific than sociology.

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## Re:Technological determinism

Posted by Reed of the Valley People - 16-05-2008 16:28

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At least at my college, anthropology included archeology, which has some science in it, and some genetic stuff.

When I was there, W&M divided up the disciplines into three Areas. You had to take so many courses in each area, and so many in the areas not containing your concentration, etc.

Area I was English, Philosophy, Religion, Modern Languages, Classics, American Studies, etc.

Area II was History, IR, Government, Econ, Sociology. The Econ, IR, Government and History departments were all in Morton Hall, a relatively large ugly 1970's built brick building on the edge of campus, and known to many as "Area II Castle."

Area III was Math, Chem, CompSci, Physics, Bio, Geology and, I think, Kinesiology.

There are also some cross-department majors like Environmental Studies and Neuroscience.

I think Anthropology straddled areas I and II and Psych straddled II and III. I know that, for example, you could get a BS or a BA in psych, depending on which courses you took

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## Re:Technological determinism

Posted by Reed of the Valley People - 16-05-2008 16:46

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Inca, did you read the accompanying piece in the same issue by Gladwell? It's about the notion of the "single genius?" It turns out that many of history's breakthrough inventions were independently and simultaneously developed at the same time or almost at the same time. Multiple inventors working on the same problem, relying on the same work that had been done prior. Suggesting that certain innovations are perhaps inevitable, or at least that "the system," such as it is, has a lot of duplication built in.

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## Re:Technological determinism

Posted by Inca - 16-05-2008 17:32

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Yes I did, Reed. I guess now that you mention it, the two are interesting to consider together, but like most of Gladwell's pieces, I got kind of bored and thought he grasped onto one clever idea/trend and kept on repeating it over and over again to talk about how interesting it was.

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## Re:Technological determinism

Posted by ursus arctos - 16-05-2008 17:48

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In my time, anthropology was split into biological anthropology (which had a high science content) and cultural anthropology (which didn't).

We also call "political science" "government", which is a bit more honest in my view.

I don't think any serious historians claim that the discipline is in fact "scientific" in the strict sense.

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## Re:Technological determinism

Posted by Reed of the Valley People - 16-05-2008 18:00

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What makes something "science?"

Is it just "rigorous argument with evidence," in which case history sometimes applies or is it "using the scientific method" in which case it often doesn't since it's hard to do history experiments.

I agree that Government is a better term for what it actually is, especially at the undergrad level. My brother majored in that at W&M, but then his masters from Syracuse is in "Public Administration," which is sort of the same thing except maybe more practical and applied.

Some Political Science is sciency. My friend's husband does various tricks with statistics and polling data. That's scientific insofar as you can measure stuff, make predictions and then test the accuracy of those predictions.

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## Re:Technological determinism

Posted by Antonio Gramsci - 16-05-2008 19:55

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"Using the scientific method" would be my definition.

And Reed, your description of the split within political science between "science-y" and "non-sciency" is precisely what I had in mind.

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## Re:Technological determinism

Posted by ursus arctos - 16-05-2008 20:01

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That would be my definition as well; which is why essentially none of history qualifies.

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## Re:Technological determinism

Posted by Antonio Gramsci - 16-05-2008 20:12

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I mean, there is the possibility of a relatively rigorous case study method in history. For instance, the famous problem in economics about how Ghana and South Korea had the same gdp/capita in 1958 but have since diverged sharply could be submitted to a historical analysis (which necessarily would involve a bunch of economics and politics, as well, but could still fundamentally be historical in orientation).

But that's about as close as you're going to get. And it ain't science.

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## Re:Technological determinism

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Posted by Reed of the Valley People - 16-05-2008 20:22

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The overall argument would not be science, but it would include some stuff that is.

Human geography or anthropology (I'm not sure where one begins and the other ends) is like that too. If you're going to argue that climate change is causing a certain pattern of migration, you need to A) prove that the pattern is actually happening B) that the climate is actually changing or has changed.

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## Re: Technological determinism

Posted by Antonio Gramsci - 16-05-2008 20:32

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And lastly, that A causes B.

One key difference in what you're describing though is that presumably if it the migration were happening now, geographers and anthropologists could go ask the migrants why they were moving, and use various social science methods to come up with some convincing scientific answers. In history, obviously, you can't do that.

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## Re: Technological determinism

Posted by Reed of the Valley People - 16-05-2008 21:22

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If it's historical, the best you can do is come up with good evidence that the people moved and that the climate changed and that one came shortly after the other. The "why" would be harder to prove without written records of people explaining why they left.

The point is, or ought to be, that just because something isn't a "hard science" amenable to prospective experiments, doesn't mean it's ok to wheel out just any old bullshit. I've encountered a few people studying various humanities and social sciences who use that old meaningless chesnut "It's not a science, it's an ART!" and think that covers all sins.

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## Re: Technological determinism

Posted by Wyatt Earp - 19-05-2008 12:50

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My question was actually quite narrowly targeted. It was "How can we judge the truth or falsehood of causal hypotheses within history?" I asked it because I think to deal with causality, you need ultimately to deal with counterfactuals. That doesn't necessarily mean you have to be able to set up counterfactual situations ("experiments"), but if you can't do that, I reckon you do need a robust explanatory model of some kind. History lacks both (a) the capacity to set up counterfactuals and (b) a robust theoretical framework for causal claims, I think, however you gloss the term "robust" (and thereby hangs a long, long discussion).

But, look, it's one thing to say that causal hypotheses in history are necessarily rather speculative, and quite another to say that history is in some sense "just narrative". That's a hell of a leap. It brushes aside the whole area of factual hypotheses, for example, which are at least some of the time can be fairly straightforwardly judged true or false.

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## Re: Technological determinism

Posted by Antonio Gramsci - 19-05-2008 13:14

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The class of historical problems which can "straightforwardly" be judged as true or false is pretty narrow, I think. We know that events occurred on particular dates. If we are dealing with individual people, we can ascribe rises and falls pretty easily (he came into a lot of money at age 18, he died of syphilis/a gunshot wound/starvation, etc.). Once a second person enters the scene, you're having to start to guess at motives in interactions. Sometimes the person in question might have left some papers that will help determine motive, but even then there's the possibility that they are censoring themselves in the writing. All you can really do is arrange events into a sequence and provide some plausible

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hypotheses, buttress it with evidence and tell a story about why they acted the way they did. If the result strikes a lot of people as being especially plausible, then you're a good historian.

However, what counts as "plausible" changes over time, which is why there will always be a market for revisionist history. And why we'll still be writing books on the Origins of the First World War for another couple of hundred years.

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## Re:Technological determinism

Posted by Wyatt Earp - 19-05-2008 14:52

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Well, anything that qualifies as a "problem" is presumably, by its very nature, not straightforward. Something gets to be a "problem" only if it's in some way problematic.

But the class of historical statements that can be straightforwardly judged true or false is quite large, and this class serves to constrain legitimate historiography in a way that other types of "narrative" are not constrained. In fact, one could argue that this set of constraints is defining: what doesn't respect it isn't history, but something else.

That's not to reduce history to the recycling of uncontroversial truisms, but it is to say that a thoroughgoing epistemic relativism is unsustainable here. You can't claim that the Armistice was signed in Bognor Regis in 1923 and still be doing history. Merely by making such a claim you become the author of fiction, or comedy.

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## Re:Technological determinism

Posted by Antonio Gramsci - 19-05-2008 16:41

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There is, as you say, no controversy about which treaties ended which wars, where they were signed, who signed them, etc. But the questions historians care about are: how did the final outline of the treaty come to look the way it did? Who gained from the treaty? Who lost? How did the treaty affect subsequent events? etc.

And these, fundamentally, are answerable only through the construction of narratives. Anchored by "true historical statements", as you say, but narrative nonetheless.

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## Re:Technological determinism

Posted by Wyatt Earp - 19-05-2008 16:46

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I'm not sure what view you're defending here: the view that historians construct narratives, or the view that that's all they do. The former seems to me to be uncontroversial, and the latter seems to me to be false.

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## Re:Technological determinism

Posted by Antonio Gramsci - 19-05-2008 17:15

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I'm saying history is primarily about narrative.

Which I don't think is controversial.

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## Re:Technological determinism

Posted by Wyatt Earp - 19-05-2008 18:08

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Well, maybe and maybe not: I'm not sure what you mean by "primarily about". Historians create narratives, yes, but what you seem to regard as incidental (the relatively uncontested factual claims that constrain those narratives) seem to me to be precisely what makes those narratives historical as opposed to some other kind of thing. That's pretty primary, I'd

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have said. But I may be misunderstanding you.

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## Re:Technological determinism

Posted by Reed of the Valley People - 19-05-2008 18:26

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but like most of Gladwell's pieces, I got kind of bored and thought he grasped onto one clever idea/trend and kept on repeating it over and over again to talk about how interesting it was.

I agree it tends to flog the same thing over and over. Fortunately for me, I read it in an airport and then on the plane, so I was in a position to be much more patient with the repetition.

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## Re:Technological determinism

Posted by Antonio Gramsci - 19-05-2008 21:59

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OK, Wyatt, but for any given subject, there are thousands or tens of thousands of possible "uncontested factual claims" (let's call 'em UFCs for ease of discussion) that might have a bearing on it. Historians don't simply knit together a bunch of these UFCs (which is how I'm reading your position, possibly wrongly); they also select and order these UFCs in a way that tells a story. For every UFC in a historian's thesis, there are thousands of others he/she chooses not to include. And these acts of inclusion and omission - of deciding which bits of a story to tell and which to not tell - are the very essence of narrative, no?

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## Re:Technological determinism

Posted by Antonio Gramsci - 19-05-2008 22:25

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To be fair, the historian also goes looking for "new" UFCs - digging through govt. papers, diaries, etc. But it is rare that work of history relies solely on these; usually whenever "new UFCs" are presented, they are embedded in a larger historical narrative of the kind I described in the previous post.

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## Re:Technological determinism

Posted by Wyatt Earp - 19-05-2008 23:14

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Antonio Gramsci wrote:  
Historians don't simply knit together a bunch of these UFCs...No, of course not.

My point is that saying "History is narrative" doesn't get you very far, unless you address the question "What kind of narrative?" The distinctive characteristic of historical narrative, as opposed to, say, fiction, is that it purports to describe events that have taken place in human societies of the past. Postmodernism-inclined types seem faintly embarrassed to admit this, but I can't see any escape from it.

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## Re:Technological determinism

Posted by Antonio Gramsci - 20-05-2008 08:09

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I sort of thought I had made that distinction clear with the fiction/non-fiction crack/gag about a page back. Bit if not then yes, I agree with you.

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