What is artificial about artificial intelligence? A provocation on a problematic prefix

When in the pages of this journal and elsewhere, we write 'artificial intelligence', what exactly do we mean? What is 'artificial' about the emerging forms of 'intelligence' we are interested in, and how do the terms heighten our ability to understand and regulate them?

A significant amount of digital ink has been spilt probing the nature of 'intelligence' and the criteria upon which AI can be classified as truly intelligent. In contrast, relatively little academic scrutiny has been given to the 'artificial' component of this portmanteau. To be artificial is, simply, to be made by humans, rather than nature. Grass is the biological product of nature, whereas artificial turf is an artefact of human conception and craft. So far, so uncontroversial. Yet, it is our contention that despite its taken-for-grantedness, the 'artificial' in AI is a problematic prefix which may come to be seen as a category mistake by future generations of scholars. Our provocation: for us to maintain a critical grasp on 'artificial intelligence', we need to drop our use of the 'artificial'. Refusing to do so, we propose, will leave us analytically flat footed in the face of accelerating technological changes.

For all the current hype around the novelty of 'artificial intelligence', as a term it has already had an extensive life. As will be known to many readers, it was brought into the world by computer scientist John McCarthy in a 1955 proposal for a workshop at Dartmouth College. Eight years earlier, Alan Turing had proposed the term 'machine intelligence' to refer to "[t]he possible ways in which machinery might be made to show intelligent behaviour" through an analogy with the human brain (Turing, 1968[1948]: 52). McCarthy's 'artificial intelligence' likewise speaks to the ways a machine might "simulate many of the higher functions of the human brain," including the ability to improve oneself (McCarthy et al., 1955: 2). Why exactly McCarthy dropped the machinic for the artificial in his 'artificial intelligence', and why his phrasing would come to prominence, is not what interests us here. What matters is that 'artificiality' became the central category by which to identify and evaluate certain forms of intelligence.

Naming matters: it allows us to see certain things, and overlook others; it guides the standards by which we judge something. This is unavoidable, but needs to be made as transparent as possible while maintaining an openness to revision. The crucial analytical problem as we see it is that the 'artificial' has largely remained simultaneously undefined and uncontested. Where it has been defined, it is simply by way of what it is not: neither natural, nor human. In this negative definition, artificiality refers to that which was human-made, but now has a life of its own. A defining aspect of 'artificial' intelligence is its ability to work independently of human supervision, even if it can only ever be produced, judged and evaluated on the basis of presumably human criteria (brain, intelligence). To be artificially-intelligent is then, first and foremost, to be non-human.

This equation of the artificial and the non-human has several major problematic implications. Crucially, it assumes the possibility of neatly separating the human from the nonhuman, the non-artificial from the artificial. Even as it is concerned with the possibility of 'artificial' intelligence, AI assumes a humanity that is distinct from its technological environment, its artificial others. As

philosophers like Bernard Stiegler have long shown, however, the human is always-already inextricably bound up with technologies. The question this raises is: when is intelligence ever not artificial? Intelligence can only ever manifest itself (in the mind and in the world) through technological mediations, in the form of language, writing, libraries, media, and so on. On these terms, all intelligence is artificial – to the extent that it inevitably relies upon the coming together of the human and non-human world. As a result, AI not only misrepresents the nature of machine intelligence, but also human intelligence.

Although we oppose the use of the term artificial on the grounds of its intellectual obfuscation and inaccuracy, the conflation of the artificial with the nonhuman also has moral implications. On one level, the status of AI as nonhuman helps to secure its position as being 'beyond' human fallibilities. Here, human intelligence is marked out as a first-nature product of biology. The messy, biological/psychological imperfections of human intelligence are then all-to-easily contrasted with the intellectual purity of the nonhuman AI. On another level, the claimed separation and superiority of AI routinely serves to obfuscate the undeniably human made, and remade, nature of AI, thereby reinforcing a sense of the futility of attempting to regulate related technologies.

Our crucial question to the reader: given these philosophical and moral implications, what is the value of holding onto the 'artificial' in AI? What, if anything, does it intellectually, diagnostically, and ethically offer us? We, obviously, realise that the term artificial intelligence is too well-established within the scientific lexicon, and popular consciousness, to be entirely replaced by another term. We firmly believe, however, that there is value in considering how AI might be better described. A return to the notion of machine intelligence is one option. Yet, the idea of intelligent machines tends to fall into the same assumptions of technology-human division outlined above. If all intelligence is a product of the mixing of human endeavour, technology and the environment, our preference would be Augmented Intelligence. Augmented Intelligence is, of course, a widely used term within the AI community. It is, however, generally used to denote the ways in which AI can support human decision-making. Nevertheless, it is possible to think of augmentation as a two-way street along which AI informs human cognition and human knowledge continues to shape developments in AI (so augmented intelligence + augmented artificial intelligence). In this context, augmented intelligences can be interpreted as meeting points of varied and interconnected forms of intelligence which are different to but not, necessarily, better than each other. Of course, the other advantage of using augmented intelligence is that we can continue to use the abbreviation AI, while giving it a wholly different meaning.

References

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Conflict of interest

On behalf of all authors, the corresponding author states that there is no conflict of interest.

Data availability statement

We do not analyse or generate any datasets, because our work proceeds within a theoretical approach.