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**XXX Conference on Contemporary Philosophy and Methodology of Science:
Conference on Artificial Intelligence: Analysis of Rationality and Ethical Reflections**

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Artificial intelligence, the limits of human cognition, and the poverty of ‘rationality’.

Abstract: This paper explores how the notions of rationality underlying conceptions of artificial intelligence, along with allied conceptions of goal-directed efficiency, may sometimes work in ways directly counter to the ethical requirements of human relationships and care. This will be illustrated by reference to research into the care of people living with dementia based upon ethnographic observation, and upon notions of embodied personhood and embodied cognition, as well as reference to the concept of ‘material thinking’ as used in art theory. This then also provides an opportunity to reflect on the nature and limits of the rationality underlying current artificial intelligence.

This paper has arisen from the chance that has brought me the opportunity to examine issues of philosophy and ethics in two seemingly disparate areas: firstly, working alongside computer scientists and philosophers examining ethical issues in artificial intelligence, and secondly working alongside medical sociologists examining the routine care of people living with dementia. These may at first sight look like polar opposites: from the attempt to build intelligence into machine form and to achieve higher and higher levels of intelligence; to the care of those living with a condition that is adversely affecting many different aspects of their cognition. Yet it is in fact their very difference which provides a large part of the rationale for this paper, in the lessons to be learned from approaching similar questions from very different perspectives.

There are also typical differences in methods and rationales typically used in these broad fields from which we might gain insight. My colleagues, in common with many others in their field, employ qualitative methods such as ethnography to closely observe and understand human interactions. This close observation of an often highly stigmatised group has the aim of increasing the humanity of care of people living with dementia, an expressly

ethical aim. But notwithstanding differences in subject matter and disciplinary approach, my work in AI and in dementia care in fact led me to the conclusion that both fields have one central issue in common: the urgent need to think deeply about the nature of the human person, and of how we stand in relation both to each other, and to the world, including technology.

Consider that those living with dementia, especially in more advanced stages, are sometimes thought of as experiencing not merely a loss of cognitive function but also of personhood, as experiencing a 'living death' or even as if a 'zombie'.¹ (This contrasts very starkly to the visions we have become used to of super-intelligent AI or robot overlords able to manipulate us lesser humans at will, and who may or may not destroy us or liberate us to a wonderful future.) Much work concerning the care and treatment of people living with dementia critically focuses on questions of personhood, an area where concepts of rationality, cognition, agency, and ethics closely interact.² This work has implications for all of us, not simply for those groups whose personhood is put in question.

And note a potential parallel in the case of AI: there are projected fears that AI render many of us, perhaps all of us, redundant, as it takes over more and more human activity. Some may achieve the status 'useless eaters',³ far beneath the cognitive powers of AI and maybe of other enhanced humans, and relegated to life of oblivion, irrelevance, and passive entertainment. Perhaps, in a manner somewhat parallel to certain current views of the status of people living with dementia, we may take our place at the bottom of what we might call the 'gradient of reason'. The issues of how we as humans stand in relation to cognition, to intelligence, to knowledge, to information, to reason, are central in both the fields of AI and of dementia.

Hence, work on the philosophical and ethical implications of AI must of necessity raise the question of human nature and how we understand the person, and how our understanding of these questions may be shaped by the very development of AI. This is especially so where AI is conceived of as a project to mimic or even to exceed 'human level' intelligence, perhaps with the potential for consciousness and independent agency. How might mere human beings stand in relation to such AI?

But questions about human nature are necessary even if we conceive of AI somewhat more prosaically in terms of discrete forms of technology deployed to achieve certain tasks, since it is already obvious that such by now ubiquitous technology has the power to adjust how we think of ourselves and of our own agency. See, for example, work exploring the notion of

¹ Low, L. F., and F. Purwaningrum. 2020. 'Negative stereotypes, fear and social distance: a systematic review of depictions of Dementia in popular culture in the context of stigma'. *BMC Geriatrics* 20: 1–16; Schweda, M., and K. Jongsma. 2022. 'Death in Advance? A critique of the zombification of people with Dementia'. *History and Philosophy of the Life Sciences* 44: 1–13.

² There is a large literature in this area. A recent paper from our research team includes summaries of some of the debates. Boddington, P., Northcott, A., & Featherstone, K. (2024). Personhood as projection: the value of multiple conceptions of personhood for understanding the dehumanisation of people living with dementia. *Medicine, Health Care and Philosophy*, 27(1), 93-106.

³ Harari, Y. N., 2017. The rise of the useless class. Ideas.Ted.Com. <https://ideas.ted.com/the-rise-of-the-useless-class/>

the 'digital self'⁴, (although there are also many and varied areas of concern). Philosophers and sociologists of technology have long understood that our technology both reflects how we see ourselves, and in turn, our technology alters us. In the realm of AI, this has become known as the AI mirror.⁵

Note that, therefore, the questions of how we understand AI and of how we understand ourselves as humans are highly entangled, such that we cannot now naively address the issue of how we understand and value the human person in a manner completely independent of questions of how we understand and value cognition, intelligence, reason, and of how we envisage and value AI. Values are deeply embedded in such questions and in complex and interdependent manner.

This is indeed one reason for considering the questions that AI presents to us regarding the nature of the person in relation to a group often deemed 'marginal' to the category of personhood by virtue of difficulties in cognitive functioning. For how we understand the concept of the person will impact upon how we even perceive certain others whose personhood might be in question.

My first published work in philosophy came out of such a question. A friend, Tessa Podpadec, is a psychologist who conducted research on the experiences of people with learning disabilities. On a visit to my house, she found a copy of the *Journal of Applied Philosophy* in my bathroom, and read it trembling with rage; an article discussed the problem of 'marginal persons', using philosophical approach which, as it were, produced a concept of the person and held it up to candidates to see if they 'passed'.⁶ In the field of psychology, the default assumption was that every individual was a person, with the attitude of searching to find the personhood of the other. We explored differences in disciplinary approach and the large impact this might have upon conclusions drawn and on values.⁷

Our very idea of ourselves – 'homo sapiens' – the 'rational animal' – is strongly bound up with our capacity for reason and intelligence. 'We call ourselves Homo sapiens – man the wise – because our intelligence is so important to us', write Russell and Norvig, tellingly in the very first sentence of their widely-influential textbook on artificial intelligence.⁸ Yet pinning so much on our intelligence as a defining feature is not without controversy. The claims that we are uniquely intelligent are dubious to say the least and moreover point to forms of intelligence which may be very different to ours.⁹ Focusing on human beings, there are concerns that focus on reason sidelines other qualities (Aristotle long ago noted our social natures, and this will be a focus of concern here too). Salient too are controversies

⁴ See e.g. Lupton, D. (2016). *The Quantified Self*. Polity.

⁵ Vallor, S. (2024). *The AI Mirror: How To Reclaim Our Humanity In An Age Of Machine Thinking*. Oxford University Press.

⁶ Roose, F. D. (1989). Ethics and marginal cases: the rights of the mentally handicapped. *Journal of applied philosophy*, 6(1), 87-96.

⁷ Boddington, P., & Podpadec, T. (1992). Measuring quality of life in theory and in practice: a dialogue between philosophical and psychological approaches. *Bioethics*, 6(3), 201-217; Boddington, P., & Podpadec, T. (1991). Who are the mentally handicapped?. *Journal of Applied Philosophy*, 8(2), 177-190.

⁸ Russell, S. J., & Norvig, P. (2016). *Artificial Intelligence: A Modern Approach*. Pearson.

⁹ Hoffmann, C. H. (2022). Intelligence in Light of Perspectivalism: Lessons from Octopus Intelligence and Artificial Intelligence. *Journal of Human, Earth, and Future*, 3(3), 288-298.

around the manner in which lines have been drawn around ‘central’ cases of humanity and others who have been excluded from full humanity on the (generally dubious) claims of possession of levels of reason which fall below some imagined threshold required for full participation in society.

But how precisely do we understand reason, intelligence, this thing so key to our humanity? We have already noted how AI can both reflect us and influence us. This means that the question of how precisely intelligence is understood within the term ‘artificial intelligence’ may be critical to many other questions of value where intelligence – reason, cognition – I used the term as an umbrella term – is at issue. And this in turn means that other areas of debate where intelligence is at issue, and is being critically examined, might in turn have things of value to say for how we understand AI and its impact upon us.¹⁰

Many have pointed out that intelligence can be understood in a wide variety of ways.¹¹ While many working in AI aim to recreate or surpass human level intelligence, and consider that the intelligence of AI is directly comparable to ours, others have argued that the intelligence of machines differs in key respects to ours (and, perhaps, always will, despite technological progress, although naturally others dispute this).¹²

Note that there is fairly widespread agreement that those predominantly creating and disseminating AI come from a notably small and homogenous group operating within a relatively closed and materially privileged world. This alone gives us pause for thoughtful consideration about how intelligence is generally conceptualised within the community of those working in AI; this shortcoming indeed forms part of the rationale for exploring notions of intelligence, reason, cognition, as understood and as valued by those taking a rather different approach.

Those responsible for developing AI are of course, generally firmly focused upon the idea that intelligence is of perhaps incomparable value, sometimes accompanied by claims that it is the key to every issue we have: as Demis Hassabis said, ‘Solve intelligence, and then solve everything else’. Note carefully that this is focused in problems that need to be *solved*; one might presume that solving problems, while important, is only one subset of human life; however, many working in AI appear to consider that intelligence key to the whole kit and kaboodle of existence. ‘Everything civilisation has to offer is a product of our intelligence; gaining access to considerably greater intelligence would be the biggest event in human

¹⁰ For a general discussion of intelligence in AI see Boddington, P. (2023). ‘Humans and Intelligent Machines: Underlying Values’. In: *AI Ethics: A Textbook*. Artificial Intelligence: Foundations, Theory, and Algorithms. Springer, Singapore.

¹¹ Legg, S., and Hutter, M. (2007). A collection of definitions of intelligence. *Frontiers in Artificial Intelligence Applications* 157:17; see also Chollet, F. (2019). On the measure of intelligence. arXiv preprint arXiv:1911.01547

¹² Larson, E. (2021). *The Myth of Artificial Intelligence: why computers can’t think the way we do*. Harvard University Press, Cambridge Mass; Lawrence, N. D. (2024). *The Atomic Human: Understanding Ourselves In The Age Of AI*. Random House.

history', Russell writes with confidence in the preface to *Human Compatible: AI and the Problem of Control*,¹³ echoing earlier uses of such a claim.¹⁴

So a common way of understanding intelligence can be expressed quite simply: 'Humans are intelligent to the extent to which our actions can be expected to achieve our objectives'; likewise, 'Machines are intelligent to the extent to which their actions can be expected to achieve their objectives'. The alert reader will notice a problem, but there is an answer: 'Because machines, unlike humans, have no objectives of their own, we give them objectives to achieve. In other words, we build optimising machines, we feed objectives into them, and off they go'.¹⁵

We can see immediately certain features of such an approach to intelligence. The nod to *Homo sapiens* – man the 'wise' – may be a little premature given that the goals to which we aim are *external* to an account of intelligence. Anyone who has ever set foot in an academic institution has met some extremely clever but very foolish people, and plenty of master criminals, captains of industry, and so on, are extremely intelligent but destructive. Not all goals may be equally worthwhile, immediately alerting us to consider that, even if everything in civilisation – whatever that is – depends upon intelligence, it must surely depend also on something else in addition. Remember this for later.

Remember too, something that may seem so obvious it may be missed: intelligence is about achieving something, bringing something about. It involves a plan. You think of something you want to achieve, you bring it about. It takes place *over time*, in a process that has a beginning, middle, and end, even if you are one of those people who can solve complicated maths problems in your head before the others have finished reading the question. It thus involves a certain conception of agency. Given that this account of intelligence is used in the service of AI developed as a technology, it is therefore not in the least surprising that it involves achieving some end; indeed, that is precisely what technology is all about. But we might ask whether a focus on the area of technology might narrow our vision of intelligence.

Note that little if anything is said about the methods involved in intelligence; the words 'the extent to which their actions can be expected to achieve their objectives' implies some kind of reliable method based on reason, rather than, say, luck or diligent prayer.

It is worth pointing out some further implications of a feature of this account of intelligence: its link with success in achieving objectives, and the gradients of success this implies; an action is intelligent to *the extent that* it achieves objectives. The efficiency with which one brings about the objectives is a key feature of intelligence; efficiency implies among other things speed and attention to resources use. The bare definition offered above leaves open whether one might get extra marks for the originality or elegance of one's method.

¹³ Russell, S. (2019). *Human Compatible: AI And The Problem Of Control*. Penguin UK.

¹⁴ See e.g. Steven Hawkin's speech at the launch of the Leverhulme Centre for the Future of Intelligence, Cambridge <https://www.cam.ac.uk/research/news/the-best-or-worst-thing-to-happen-to-humanity-stephen-hawking-launches-centre-for-the-future-of>

¹⁵ Russell, S. (2019). *Human Compatible: AI And The Problem Of Control*. Penguin UK.

There is thus automatically a notion of higher or lower intelligence. This is a central element of how we so often think of intelligence –almost automatically thinking in the same breath as more or less clever, higher or lower IQ. IQ tests were indeed first introduced precisely as a means of ranking and comparing individuals in the army and in industry and education.¹⁶ Given the sometimes useful, but often unfortunate consequences of such rankings between human beings, one might conclude that *even if* intelligence *per se* critically underpins civilisation, its *measurement* may sometimes make us less civilised.

Some thoughts on methodology

The brief discussion of intelligence, its nature and value may at least start to give the hint that there may be more to life – more to being human perhaps – than simply being astoundingly clever. Is the current attention to AI – whether positive or negative – its sudden encroachment into our lives – focusing too much on a particular notion of intelligence at the expense of a richer and more nuanced view of the person? Are we seeing humans too much through the lens of AI?

It will be important to consider our methodology in addressing this question, given the importance of the topic and the price that is to be paid for getting it wrong, which could be misunderstanding or undervaluing human beings as a whole, or individuals or groups of humans, as well as missing things of value in life. Furthermore, we have discussed how our ideas of AI and of the human person are mutually entangled, making matters of methodology even more complex. Much will depend upon any starting point, and there will be many different possible approaches to understanding and unpacking humans in relation to AI.

Let us consider one approach to sorting the human from the machine. Neil Lawrence has written and spoken of humans in relation to AI for many years. His book *Atomic Human: Understanding Ourselves in the Age of AI* elaborates his view that human intelligence and machine intelligence are not the same, and that therefore, we cannot be replaced by machines.¹⁷ Lawrence has a particular methodology in understanding the human person expressed in his title. The Ancient Greek atomists reasoned that one could not slice the world into smaller and smaller pieces forever: at some point, there would be something that remains, something so small that one could not cut it any smaller. Likewise, he argues, if we compare ourselves to AI, we will find in what remains, where humans differ, we will find what is distinctively human. What is refreshing about this approach is that Lawrence does not use what might seem the obvious approach in looking immediately for how we might do better than AI, but in precisely the opposite: he finds our special human status precisely in our weaknesses relative to AI, and the culture, creativity, ingenuity and bravery we have needed to address the limits of our human condition, including the human responsibilities for decisions and possible disasters that go along with this. This is an immensely valuable and interesting contribution to understanding how humans stand in relation to the possibilities and limits hoist on us by AI. But nonetheless, by the very nature of the topic, where one starts ones exploration of these ideas will make a difference, and approaches

¹⁶ Kamin, L. J. (1974). *The science and politics of IQ*. Wiley.

¹⁷ Lawrence, N. D. (2024). *The Atomic Human: Understanding ourselves in the age of AI*. Random House.

from different points of view can add to this complex and rich discussion about how we stand in relation to machines.

The presence of technology as a means to overcome human limitation is there at the beginning. Lawrence's first examines the question of what we want from AI, where it is commonly assumed what we want is a smarter human. But this is the wrong starting point, he will conclude, since the intelligence of AI is not the same as ours. The difference is explored in large part by noting what Lawrence calls the 'embodiment factor': although our brains can process information at immense speed, we communicate in ways which are extremely slow and inefficient compared to the speed at which computers can transfer information. We have a very low bandwidth and compared to AI we all have locked-in syndrome. There is more detail than can be explained in full here, but as a result of our limits compared to computers, we often struggle with miscommunication but find ways around this: means of expression such as poetry, for example. Humans take on responsibility for decisions and actions made under conditions of imperfect information. We are not simply poor versions of some real or imagined super-calculating, super-intelligent, super-rational AI. We are human, unique, embodied creatures with distinctively human roles and responsibilities and adventures to be

As illuminating as this is, the starting point of information transmission and its speed looks at a certain aspect of our human condition. This is not indeed a criticism, because of the nature and richness of the task of understanding humans in relation to AI. The word 'limitation' is perhaps also the wrong word and maybe we need a new one. A flute is not 'limited' compared to a piano because it is not a keyboard instrument. A piccolo is not 'limited' compared to a flute because it looks basically the same but is smaller.

Recall the complexity of working through an understanding of the human of our current situation, in a world already infused with AI, both real and imagined. To start off by expressly comparing humans to the capabilities of machines is to start from a particular perspective. This means that we already have computers on the brain, as it were, measuring humans against them. Good strategy. But we are considering how focus on us as intelligent reasoning creatures – and thus our limitations in this regard – has entranced and captured us; and consider how ubiquitous AI is, and how dominant the 'mind as computer' model of humans is; what would we find if we look closely in the very places which seem the least promising.

If we have reason to suspect that the world of technology may be a limited one and may be affecting how we see the world, then *let us look in unlikely places*. The situation of people living with dementia who are experiencing declines in cognition forms a *limit case* for exploring these issues. Perhaps when certain forms of cognition are being eroded, we can see more clearly what remains.

A further thought about methods. Computers run tasks when we tell them to, following certain methods. But humans do not work quite the same way. Taking a break and walking to a friend's house, it struck me that my starting point of thinking about AI from considering the position of people living with dementia came about not at all through reason, or through planning, but by sheer chance. This too is a method, but is ungovernable by 'reason'. That I had this thought after I'd finished work for the day, walking, was a combination of human

limitation and planning. It's well known that stopping work on a problem and doing something entirely different is a good way to have new ideas. But computers don't generate new ideas when you turn them off.

Lawrence notes the embodiment factors that characterise humans. As we shall see below, embodiment is often stressed in work concerned with the personhood of people living with dementia in particular. Our embodiment is a central fact of our existence, yet strangely is often almost ignored in accounts of the person. A pervasive whiff of dualism lingers in the air; what it is to be a person is somehow to be a mind embedded in the physical world and the ever present temptation to compare humans to AI only encourages this. The language too is odd: the divide between the mental and the physical inclines to a view of humans as needing a physical substrate – and this substrate perhaps then could be a machine, according to some of the wilder thinkers in AI.¹⁸ But we are *biological* creatures, and more should be done to recognise this. Of course, in relation to the wonders of computing, biology is frequently mentioned in a usually derisory manner in describing our brains as operating through 'wetware', of humans as stuck in 'meatsuits', hence – alas! – with less efficient processing speeds.

As biological creatures we are born of other biological creatures, we grow and develop, and we die. As humans we are born the most helpless of creatures, arriving early in gestation owing to the mechanical challenges of getting our large brains through our mother's hips, and hence requiring long years of nurture which helps in turn to necessitate complex social connections. Hence, biology necessitates that the link of our rational natures to our social natures is there from the start.¹⁹ Birth hurts; childhood is fraught with danger; adolescence is a nightmare; the process of dying is often difficult; and in between we get ailments major and minor. The realities of our biologically developing, growing and waning bodies pose conditions upon our existence which shape not just what we are capable of but what ethical realities are presented to us.

We are formed from the 'crooked timber of humanity'.²⁰ We get diseases of various types. Biological development is breathtakingly complex and often deviates slightly, sometimes a long way, from a norm. If you bought a new MacBook Pro and found it was slightly asymmetrical and the lid didn't quite fit, you'd take it back. But the 'fearful symmetry' of nature, of which Blake wrote (*Tyger tyger burning bright/ in the shadows of the night/ what Immortal hand or eye/ could frame thy fearful symmetry*)²¹ is fearful perhaps in its perfection. In reality most of us are a bit lop-sided. This left foot is not quite the same size as its companion right foot, perhaps, and it's sometimes tricky getting comfortable shoes. That is life. Literally.

¹⁸ See e.g. Ray Kurzweil, (2005) *The Singularity is Near*, Duckworth.

¹⁹ Many have discussed the ethical implications of the realities of human reproduction and child rearing. See e.g. Morgan, E. (2011). *The descent of woman*. Souvenir Press; Noddings, N. (1995). 'An ethic of caring'. In *Justice and care: Essential readings in feminist ethics*, 699-712.

²⁰ Kant, I. *Idea for a General History with a Cosmopolitan Purpose* (1784), Proposition 6.

An amusing example of the difference between our current AI and humans occurred when I searched online to check the source of this famous quotation. The first search result was an advert from 'Amazon Official Site: Low prices on the crooked timber of humanity'.

²¹ *The Tyger*, in: Blake, W. (1866). *Songs of innocence and experience: with other poems*. Basil Montagu Pickering.

The care of people living with dementia, personhood, and cognition.

As stated earlier, there is a vigorous debate concerning the notion of personhood in relation to people living with dementia, arising around calls for person-centred care and from concerns that those with dementia were readily dehumanised as a group, and often received poor care.²² This frequently goes along with critiques of a purely ‘biomedical’ model of dementia insofar as such a model understands it disease terms focusing upon the brain, rather than considering the whole person and the meaning of the condition.²³ The underlying aims of these discussions and research are therefore practically oriented, and oriented towards care – expressly geared towards seeing the humanity in people living with dementia. However there is a direct confrontation with certain philosophical ideas of the nature of the person, in particular with models of the person which focus on mental criteria, foreground cognition and rational agency and stress autonomy, awareness of the self, the ability to communicate, and reciprocal recognition of other persons, as found in the work of philosophers such as Dennett²⁴ and Tooley,²⁵ and which have often been drawn upon in philosophical debate concerning those human beings who may not ‘qualify’ for full personhood.²⁶

These ideas can also be seen to inform contemporary culture and thinking in many ways, with a strong mind/body split often discernible.²⁷ Note how such an account of the strivings of rational agency fits neatly with the definitions of intelligence cited above: ‘Humans are intelligent to the extent to which our actions can be expected to achieve our objectives’.²⁸ This is an account of our agency: we have objectives. And we are strategic in how we go about them. This is therefore a ‘success’ conception of the person, which some fail.

In response, many have argued that we need a different conception of the person, one grounded not in looking to see what certain groups of ‘putative persons’ *can’t* do, but what they *can*. Calls for embodied and relational accounts of the person also act as counterweights to the focus on mental aspects of personhood to the extent that the body is somehow merely a vessel of the mental, and to the stress on language and on certain conceptions of cognition and rationality. My aim is to lead a journey towards broadening ideas of what might count as agency, what might count as cognition or reason. This will in

²² See e.g. Kitwood, T. (1997). *Dementia reconsidered: The person comes first*. OUP Press; Kitwood, T. and Brooker, D., (2019). *Dementia reconsidered revisited: The person still comes first*. McGraw-Hill Education (UK).

²³ See e.g. Lyman, K. A. (1989). Bringing the social back in: A critique of the biomedicalization of dementia. *The Gerontologist*, 29(5), 597-605

²⁴ Dennett, D., 1988. Conditions of personhood. In *What is a person?* (pp. 145-167). Totowa, NJ: Humana Press.

²⁵ Tooley, M., 2009. Personhood. In Kuhse, H. and Singer, P. eds. *A Companion to Bioethics*, 2nd ed, Blackwell.

²⁶ Wasserman, D., A. Adrienne, B. Jeffrey, and P. Daniel. 2017. “Cognitive Disability and Moral Status”, *The Stanford Encyclopedia of Philosophy* (Fall 2017 Edition), Edward N. Zalta (ed.), <https://plato.stanford.edu/archives/fall2017/entries/cognitive-disability/>.

²⁷ See Low, L. F., and F. Purwaningrum. 2020. ‘Negative stereotypes, fear and social distance: a systematic review of depictions of Dementia in popular culture in the context of stigma’. *BMC Geriatrics* 20: 1–16 for the claim that certain accounts of the nature of the person help to lead to the stigmatisation of people living with dementia. For a discussion of the development of modern conceptions of the self, see Taylor, C. (1989). *Sources of the self: The making of the modern identity*, Cambridge, MA: Harvard University Press.

²⁸ Russell, S. (2019). *Human compatible: AI and the problem of control*. Penguin UK.

many ways directly counter the ideas of intelligence/rationality and agency which were discussed earlier in relation to AI.

It is possible and indeed easy to miss or misattribute rationality and agency especially where an assumption of its lack already exists, and especially where certain 'high' standards are expected as the norm.²⁹ Ethnographic work closely observing the behaviour of people living with dementia on acute hospital wards, with observations taking place for substantial periods of time over weeks or months, has shown that often rationality and agency is present in the behaviour of people experiencing cognitive difficulties, but is not recognised as such. Often the conditions within hospital present demands on patients, such as the demand to follow the timetables of the ward or to stay in bed to permit the smooth running of the ward, leads to behaviour which only serves to reinforce the view that agency and rationality are not present – the classic 'looping' behaviour found in studies of hospitals and other institutions in classic works of sociology such as that of Goffman.³⁰ A desire to get out of bed to go to the toilet or simply to stretch one's legs may be seen as 'irrational' and therefore not agency but simple 'wandering'.³¹ It is of course a good question as to why just 'wandering' does not count as a form of rational agency. After all, there is virtually nothing else to do on the ward. It is an implication of the definition of intelligence we are considering, where intelligence is definitionally working towards a goal, that doing something for 'no good reason' is somehow irrational and cannot serve to demonstrate 'intelligence' and hence does not represent true agency. We will consider this further below.

But deeper critiques of the 'standard' account of the person are also made in the call for embodied and/or relational accounts of agency. There is of course variation in the details of claims made, and unfortunately not enough space to go into great detail here. The attention on embodiment counters the common assumption of language use as a marker of personhood, agency and rationality. The relational aspects highlight how personhood and meaningful interaction can be expressed between individuals, sometimes with claims that elements of personhood are constructed through such interactions (some work appears to claim that agency in another can be created through interactions with a second person, some that it is co-created or discovered through such interactions).

Much of this work arises from close ethnographic observation over long periods of time, paying acute attention to individuals and their social world.

Embodiment may play multiple roles. There is considerable work which shows the importance of the felt familiarity of the environment, including the familiar touch of clothing, in increasing the alertness and responsiveness of people living with dementia, and also acting to foster inclusion in a social community with again beneficial impacts upon cognitive function and behaviour.³² This attention to embodied reality may not in itself mean

²⁹ Boyle, G. (2014). Recognising the agency of people with dementia. *Disability and Society*, 29 (7), pp. 1130-1144.

³⁰ Goffman, E. (1961). *Asylums: Essays on the social situation of mental patients and other inmates*. Routledge.

³¹ Featherstone, K. and Northcott, A., 2021. *Wandering the wards: An ethnography of hospital care and its consequences for people living with dementia*, Taylor & Francis.

³² See e.g. Buse, C. E., & Twigg, J. (2015). Clothing, embodied identity and dementia: maintaining the self through dress. *Age, Culture, Humanities*, (2).

that embodiment is thus an essential element in an account of personhood, only that attention to such matters may help the person to be revealed. But other work suggests a firmer link of personhood with embodiment.

There are strong links between embodiment and relationality in that embodied personhood may often be expressed within the social world. The 'standard' account of personhood generally includes the capacity for reciprocal recognition of other persons as one of the conditions of personhood. Work stressing embodiment, including behaviour but also elements of comportment such as appearance including grooming and dress, look at embodiment as a vehicle of such recognition, and in this a way such elements of embodiment may be thought constitutive of personhood.

An influential body of work in this field has been produced by Pia Kontos,³³ and many others have drawn upon it in subsequent work or produced similar work in parallel.³⁴ She draws upon work in the phenomenological tradition, centrally the philosophy of Merleau-Ponty.³⁵ Work in this area also draws upon Heidegger citing for example his conception of 'Handlability' in understanding the role of embodiment and interactions with the physical world in cognition.³⁶ There are strong links it would be possible to draw between work in this area, and work within 4E or 6E cognition, which unfortunately there is not sufficient space to explore here.

Kontos' work observing people living with advanced dementia in care homes has found that awareness of the self, the requirements of the social world, and one's status within it, may persist long after language use has significantly deteriorated.³⁷ Close and attentive observation may be needed to determine this; nonetheless once spotted, agency is unveiled. Some of the examples she cites have a profound poignancy given the background of the dehumanisation and isolation which people living with dementia often experience. An elderly lady, 'Anna', with advanced dementia walks slowly along a corridor, stopping to look in a mirror to adjust her lipstick, (remarking, 'It makes me look dead without a little colour')

Buse, C., & Twigg, J. (2018). Dressing disrupted: negotiating care through the materiality of dress in the context of dementia. *Materialities of Care: Encountering Health and Illness Through Artefacts and Architecture*, 97-109. Boddington, P., Featherstone, K., & Northcott, A. (2021). Presentation of the clothed self on the hospital ward: an ethnographic account of perceptual attention and implications for the personhood of people living with dementia. *Medical Humanities*, 47(2), e3-e3.

³³ See e.g. Kontos, P. C. (2004). Ethnographic reflections on selfhood, embodiment and Alzheimer's disease. *Ageing & Society*, 24(6), 829-849.

Kontos, P. C. (2005). Embodied selfhood in Alzheimer's disease: Rethinking person-centred care. *Dementia*, 4(4), 553-570.

³⁴ See e.g. Dzwiza-Ohlsen, E. N. (2021). Dementia as Social Disorder—A Life-world Account. *Phenomenology and Mind* 21: 74–86; Fuchs, T. (2020). Embodiment and personal identity in Dementia. *Medicine Health Care and Philosophy* 23: 665–676; Fuchs, T., (2021). *In defence of the human being: Foundational questions of an embodied anthropology*. Oxford University Press.

³⁵ Merleau-Ponty, M. (1962). *Phenomenology of perception*. London: Routledge and Kegan Paul. Translated by C. Smith.

³⁶ Heidegger, M. (1954) 'Question concerning Technology', *Readings in Philosophy of Technology* (Google eBook).

³⁷ None of this is to make any claims about the condition of individuals at any particular stage of dementia, which is a progressive, variable condition, or to claim that all individuals with dementia at any stage possess such awareness and abilities.

hence showing awareness of her own appearance but also of the gaze of others and of her perceived requirements of her social position.³⁸ Residents, even those without language, often showed acute awareness of correct comportment at the dining table, 'tutting' with disapproval at poor behaviour from others.³⁹ Another lady, 'Molly' would have a bib placed around her neck by carers before each meal, and would then proceed to carefully take out her pearl necklace, given to her as a wedding present, from under the bib so that it could be seen by others in the dining room.⁴⁰ A resident who had not spoken for a long time sat in an armchair next to another resident who was visibly distressed. She leant over and placed her hand gently on the other lady's forearm, and holding her hand there, sang a lullaby.⁴¹

A question that might arise is whether what is observed genuinely amounts to forms of cognition and agency, and how much arises from simple ingrained habit persisting after significant loss of other function and present 'only' as a form of ingrained body memory, expressed through the rituals and habits of everyday life.⁴² (A further question of course is whether body memory is 'only' body memory.⁴³) Kontos herself in an early paper examining the later works of the artist William De Kooning, who experienced dementia and continued to paint albeit in a very different style, concluded that his 'painterly hand' persisted despite the onset of dementia as it had been so deeply ingrained in this professional artist.⁴⁴ Her subsequent ethnographic work based upon observation has, as we have seen, found meaningful behaviour, but she also states of people living with dementia that they 'interacted meaningfully in the world through activity and engagement *rather than* contemplation or reflection' (emphases added),⁴⁵ and some consider that the kinds of embodied agency discussed in relation to people living with dementia does not amount to cognition per se.

Contrariwise, it may be a better approach to widen our notion of 'cognition' especially since the influence of views of the 'mind as computer' and the lure of artificial intelligence may be impacting how we understand human thought and agency. I will offer some reflections based upon work conducted with a colleague, Megan Wyatt, exploring how art activities can provide an opportunity for embodied cognition and agency for people living with dementia.⁴⁶ Examining painting activities within a group of people experiencing cognitive

³⁸ Kontos, P. C. (2004). Ethnographic reflections on selfhood, embodiment and Alzheimer's disease. *Ageing & Society*, 24(6), 829-849: 832.

³⁹ Kontos, P. C. (2004). Ethnographic reflections on selfhood, embodiment and Alzheimer's disease. *Ageing & Society*, 24(6), 829-849: 833.

⁴⁰ Ibid.

⁴¹ Kontos, P. C. (2004). Ethnographic reflections on selfhood, embodiment and Alzheimer's disease. *Ageing & Society*, 24(6), 829-849: 834.

⁴² Bourdieu, P., (2018). Structures, habitus, practices. In Faubion, J., 2018. *Rethinking the subject: An anthology of contemporary European social thought*. Routledge. (pp. 31-45).

⁴³ For a discussion closely relating to relevant work on dementia, see Fuchs, T., (2012). The phenomenology of body memory. In Koch, S.C., Müller, C., Summa, M. and Fuchs, T., 2012. *Body Memory, Metaphor and Movement*, John Benjamins Publishing Company, pp.9-22.

⁴⁴ Kontos, P.C., (2003). 'The painterly hand': embodied consciousness and Alzheimer's disease. *Journal of Aging Studies*, 17(2), pp.151-170.

⁴⁵ Kontos, P. C. (2004). Ethnographic reflections on selfhood, embodiment and Alzheimer's disease. *Ageing & Society*, 24(6), 829-849: 31.

⁴⁶ Wyatt, M., and Boddington, P. 'Painting as a Form of Material Thinking: Promoting Agency and Expression for People Living with Dementia', (forthcoming); Wyatt, M., and Boddington, P., 2024. Painting Workshops for

decline allows us to see this more clearly, to observe 'what remains'. This work draws upon the concept of 'Material thinking'⁴⁷ in art theory as well as upon the concept of 'flow',⁴⁸ so then generalises to everyone, not simply those living with dementia. Again, unfortunately, only a very brief account can be given here.

Briefly, material thinking refers to a form of knowledge gained from handling and engaging with materials during the production of forms of art, knowledge which is of its nature hard to express verbally. Its dependence on engagement with particular aspects of material reality means that it hence varies with the art form and provides distinctive and individual experiences for the creator.⁴⁹ The concept draws upon Heidegger's notion of Handlability,⁵⁰ and recognises non-linguistic, experiential knowing,⁵¹ which can extend beyond formal linguistic meaning to include embodied and gestural manifestations.⁵² A related concept is that of 'in-the-moment' experiences whereby one is immersed fully within an activity to the exclusion of external realities,⁵³ closely aligned to the concept of 'flow', 'which in basic terms describes an experience whereby an individual is fully involved in the present moment'.⁵⁴ Since people living with dementia may struggle with tasks involving memory, forms of creativity and agency which involve flow states may be especially valuable for them.⁵⁵

The observations arose out of a series of painting workshops conducted with people living with dementia, in varying stages of the condition. Close observation was used to observe not simply the results of these workshops, but the *process* of painting itself, especially with a view to understanding it as a form of cognition and of agency. The workshops were led by a researcher who is also an artist, and thus has an intimate understanding of the process of painting. Paint was chosen as a medium owing to its inherently malleable and expressive properties offering potential opportunity for the display of material thinking.⁵⁶ The researcher painted alongside the participants, engaging in dialogue where possible, and closely observing the process of painting. The participants varied in the nature and severity of their symptoms, with very variable abilities to communicate verbally.

People Living with Dementia as a Means of Expression and Communication: Revelations from our Elders, *Quality in Ageing and Older Adults*, 25,4.

⁴⁷ Carter, P., (2004). *Material thinking: The theory and practice of creative research*. Melbourne University Publishing; Bolt, B. (2006) *Materializing pedagogies, Working Papers in Art and Design*. Available at: http://www.herts.ac.uk/__data/assets/pdf_file/0015/12381/WPIAAD_vol4_bolt.pdf

⁴⁸ Nakamura, J. and Csikszentmihalyi, M. (2014) 'The concept of flow', in *Flow and the Foundations of Positive Psychology: The Collected Works of Mihaly Csikszentmihalyi*, pp. 239–263. doi: 10.1007/978-94-017-9088-8_16.

⁴⁹ Tonkinwise, C. (2008) 'Knowing by Being-There Making : Explicating the Tacit Post- Subject in Use', *Studies in Material Thinking*, 1(2).

⁵⁰ Bolt, B. (2014) Heidegger, Handlability And Praxical Knowledge. Available at: <http://acuads.com.au/wp-content/uploads/2014/12/bolt.pdf>

⁵¹ Niedderer, K. and Roworth-Stokes, S. (2007) 'the Role and Use of Creative Practice in Research and Its Contribution To Knowledge', *IASDR07 - International Association of Societies of Design Research*, (September 2014), pp. 1–18.

⁵² Kee, H., 2018. Phenomenology and ontology of language and expression: Merleau-Ponty on speaking and spoken speech. *Human Studies*, 41(3), pp.415-435.

⁵³ McNiff, S. (1992) *Art as Medicine*. Colorado: Shambhala Publications.

⁵⁴ Nakamura, J. and Csikszentmihalyi, M. (2014) 'The concept of flow', in *Flow and the Foundations of Positive Psychology: The Collected Works of Mihaly Csikszentmihalyi*, pp. 239–263. doi: 10.1007/978-94-017-9088-8_16.

⁵⁵ Killick, J. and Craig, C. (2012) *Creativity and Communication in Persons with Dementia, a Practical Guide*. 1st edn. London: Jessica Kingsley Publishers.

⁵⁶ Elkins, J. (1999) *What Painting is*. New York: Routledge.

Again it is only possible to summarize very briefly the findings, but it was concluded that the participants demonstrated the capacity to use the materials of painting in ways which involved an attentive form of creative and purposeful activity. The ‘material thinking’ behind such creative engagement with materials could apply to anyone, yet is thrown into sharper relief by its demonstration within those who are experiencing difficulties with cognition, and who are often considered to lack purposeful agency. The participants often showed close attention to their materials, paint, brush, and canvas or paper, when making marks of different types, for example handling the paint brush, adjusting the tip, and adjusting the thickness of the paint to make marks of different types. Viewing this through the lens of theory about material thinking, such knowledge of how to handle materials is something only possible with actual engagement with those materials. Participants often demonstrated periods of intense concentration on their work, as if immersed in a flow state, something perhaps especially notable given the difficulties in accomplishing tasks often associated with dementia. The process of painting seemed to arise from within such states of concentration, with some of those participants who could communicate verbally describing how their ideas about their painting developed flexibly from the experience of applying the paint and of mark making. As one participant said, ‘you see the very stroke gives it expression ... I might as well slosh it on I find this very satisfying’.⁵⁷

Attention to the kinds of thought processes and creative activity achieved while immersed ‘in the moment’ in a flow state, and the creative thought that can come from ‘sloshing’ paint around, is a useful counter against the idea that ‘intelligence’ must involve a plan directed efficiently towards a goal. Moreover, participants also often expressed satisfaction with the painting workshop, and in many cases signs of anxiety visibly disappeared when engrossed in painting; this suggests the value of experiences focused upon the present may have for their own sake. It is not simply the end result of a process of ‘thinking’ that we value; it is the process itself.

Finally, a few thoughts in conclusion.

As I attempted to show above, there are certain voices in AI portraying a particular notion of intelligence which contains implied accounts of agency and rationality, and perhaps a supreme place for ‘intelligence’ in our civilisation; hence implicitly, accounts of what in life is worthwhile and specifically human. There is opposition to this within those working on AI, and given the frequent criticism that the broad world of AI may suffer from tunnel vision, a broadening of the areas upon which we draw to look for alternative views is advisable. This is important for ethical reasons, firstly insofar as AI raises direct ethical questions for us, and secondly insofar as a certain picture of AI and of intelligence influences how we think about human beings in general, and certain human beings in particular – poignantly, generally this applies precisely those humans most deserving of our care and moral regard. Calls to widen our accounts of cognition and of human agency and value are coming from many quarters, and adding voices to these calls should be welcomed.

⁵⁷ ‘Painting as a Form of Material Thinking: Promoting Agency and Expression for People Living with Dementia’, Wyatt, M., and Boddington, P. (forthcoming).

Some projections for how AI might impact society also herald the creation of a new class of humans, those left out of the wonderful technological future – possibly all of us, possibly those who refuse to be ‘upgraded’ with brain chips or whatever, and very possibly those who are left to a life of unemployment in an imagined future where (for the first time ever) new technology makes work largely redundant – the ‘useless eaters’ of tomorrow. Whether or not any of these utopian/dystopian worlds come about, there are questions for all of us, including the question of what account of the worthwhile in human life should be given. Technology is used by us to accomplish tasks. Technology is replete with claims of future promise. So it is no surprise that accounts of intelligence, rationality, agency, human worth, which derive from or are utilised by, or influenced by technology, focus upon plans, goals, what we want to do in the future, even if that future is seconds away. The work arising from observing and thinking about the process painting brings us back to another source of value in human life – mucking about with things in the present with no clear goals – (although goals may indeed materialise out of these). Humanity might build bridges, fly to the moon, carve incredible sculptures, bake cakes worthy of a prize on a TV show watched by millions, but we also sit around the campfire just idly and randomly whittling bits of wood seeing how it turns out while we listen to the birds sing. Such moments may also exhibit valuable forms of thought.

I began by considering how deeply we associate human beings with some conception of intelligence, noting the possible irony of *Homo sapiens*, man the wise. In the past philosophers have valued contemplation. Plato may have thought of this in terms of a grand vision of contemplating eternal truths (which to be honest might leave some humans bored rigid). Contemplation of course is an aspect of thought, and is inherently an activity of the present, done for its own sake, (even if it leads to action later). This is indeed part of a vision of human wisdom, but is notably abstract and divorced from our material reality, and notably elitist. We should extend this to recognise the more prosaic forms of contemplation, to recognise the embodied nature of our lives and of our thought, and the assorted bits of crooked, wood-worm riddled timber out of which we all are made. By doing so, we may help to recalibrate the skewed vision of humanity that accompanies and taints some of the current thinking around AI.

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