"Can A.I. Pray or Write Songs?"
Proper 18C (September 8, 2019)
Scripture Readings: Jeremiah 18:1-11; Luke 14:25-33
Rev. Dr. David A. Kaden

>>Open our eyes that we might see wondrous things in your word, Amen.<<

In November of 1996, Soprano Sarah Brightman joined Tenor Andrea Bocelli on stage in Germany to sing "Time to Say Goodbye,"[1] accompanied by a full orchestra and choir. As Brightman and Bocelli ascended the stage they were greeted with a standing ovation from the expectant audience. I've only seen the performance on YouTube, but it is magical every time I watch. Their energy flows out in waves, and time seems to pause as you listen to what some back then said were the two most angelic singing voices on the planet. The audience was on its feet by the end of the song, and many were wiping away tears. It's a performance that reminds me of a comment made by composer Nick Cave who said, "What a great song makes us feel is a sense of awe … ."[2]

Nick Cave is a polymath - a prolific musician, author, composer, screenwriter, and he writes a widely-read blog.[3] One day, a guy named Peter, a reader of the blog, posted a question, asking Nick Cave whether AI - artificial intelligence - could ever write a good song? "Considering human imagination [is] the last piece of wilderness," wrote Peter in his post, "do you think AI will ever be able to write a good song?" The great English computer scientist Alan Turing once posed a similar hypothetical when he wondered whether a computer could ever enjoy strawberries and cream. Nick Cave's response to Peter's question about AI and music was measured and brilliant.[4] "Dear Peter," he wrote. "[it has been suggested by some] that AI will be able to write better songs than humans can, [because, the argument goes, …] we listen to songs to make us feel certain things and … in the future AI will simply be able to map the individual mind and create songs tailored exclusively to our own particular mental algorithms, that can make us feel, with far more intensity and precision, whatever it is we want to feel." Cave goes on in his response to qualify this statement - I'll return to that a little bit later.

AI was in the news this past week. A headline in *The New York Times* declared that AI had made a breakthrough by passing an 8th grade science exam.[5] "Four years ago," according to that article, "more than 700 computer scientists competed in a contest to build artificial intelligence that could pass an eighth-grade science test. There was $80,000 in prize money on the line. [But] they all flunked. Even the most sophisticated system couldn't do better than 60 percent on the test. A.I. couldn't match the language and logic skills that students are expected to have when they enter high school. But on Wednesday, the Allen Institute for Artificial Intelligence, a prominent lab in Seattle, unveiled a new system that passed the test with room to spare. It correctly answered more than 90 percent of the questions on an eighth-grade science test and more than 80 percent on a 12th-grade exam." According to the article, the next big advance for AI will be when it can do well on the GRE and enter grad school.

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[1] https://www.youtube.com/watch?v=g3ENX3aHlqU
[2] https://www.brainpickings.org/2019/01/24/nick-cave-music-ai/
[3] https://www.theredhandfiles.com/
[4] Read the entire response here: https://www.brainpickings.org/2019/01/24/nick-cave-music-ai/
[5] https://www.nytimes.com/2019/09/04/technology/artificial-intelligence-aristo-passed-test.html?smtyp=cur&smid=tw-nytimes

A couple of weeks ago, my son and I watched the first *Terminator* film, starring Arnold Schwartzenegger - a 1980s blockbuster about AI gone awry: computers able to think and create for themselves with such sophistication that they try to wipe out their human creators. A similar theme is found in the 1980s film *War Games*, and in the 1999 film *The Matrix*, and in the 2004 film *I, Robot*, starring Will Smith, and in several others. Maybe Hollywood is prophetic, or just worried that AI will soon be able to create better films than human writers, or maybe these films reveal a deep-seated anxiety that AI will eventually become unwieldy like Mary Shelley's *Frankenstein* monster. Some of you in this congregation, I know, are working on AI at Cornell and Ithaca College, and some of our high school youth are writing computer code and working on algorithms in groups at school or at home on their own. Our lives are becoming algorithmic - something that worries Harvard Business professor Shoshana Zuboff in her new book *The Age of Surveillance Capitalism*,[6] which details the rise of Google and Facebook's ability to track all our online activity through algorithms, using these data to predict our future online behavior - it's called the "physics of clicks" - and then selling these data to the highest bidding advertisers. Zuboff even wonders whether someday we'll be working for smart machines. Maybe someday AI will be able to write sermons.

AI makes me think of today's reading from Jeremiah where God, the creator, is likened to a potter, and humans, the creation, to clay in the potter's hands. In today's story, Jeremiah - that ancient, sixth century BCE Hebrew prophet - is sent by God to a potter's shop to observe a potter at the wheel, shaping a lump of clay as the wheel spins. The lump thrown on the wheel "spoils," according to the story, and the potter simply reworks the clay into something else. As Jeremiah watches the artisan at work, a word from God whispers in his ear, saying, "I , God, am a potter, and people are clay." God the artisan - it's one of my favorite images of God in the Bible (even though Jeremiah can't help himself but to also include the spooky image of God-as-potter planning to do bad things unless people repent - Jeremiah was, after all, a product of his time). In her commentary on this story, preacher Sally Brown elaborates on the potter-clay image: Imagine, she writes, "[God] the potter bent to the wheel, clay spattered from head to foot, sensitive hands pressing and shaping and spinning the clay to draw forth something useful and beautiful."[7] Jeremiah imagines God in this way - a skillful artisan, finely attuned to every turn of the wheel, applying slight pressure to shape people - to shape us - into what Sally Brown calls something that "exceed[s] our vision and imagination [of what we're capable of]."

A few days ago, I did a quick Google search on "TED Talks and Artificial Intelligence" (I wonder if the Google algorithm tracking my online activity connected this search with writing a sermon) - a quick search on TED Talks and AI yielded 66 results, some of which are quite scary. One title was: "Can We Build AI Without Losing Control Over It?"; "Get Ready for Hybrid Thinking," is another title; "What Happens When Our Computers Get Smarter Than We Are?," reads another. Each one expresses concern about machine superintelligence - Frankenstein monster machines that will treat us as we treat ants; machines that process information a million times faster than our brains, able to perform 20,000 years' worth of human-level learning in a week, and doing this week after week,

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[6] Shoshana Zuboff, *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power* (New York: Public Affairs, 2019).

[7] Sally A. Brown, "Homiletical Perspective," in *Feasting on the Word: Preaching the Revised Common Lectionary*, David L. Bartlett and Barbara Brown Taylor, eds. (Year C, vol. 4; Louisville: Westminster John Knox Press, 2010), 27.

making *The Terminator*, *The Matrix*, *I, Robot*, and a library of science fiction books about machine overlords seem less far-fetched. Can the clay outsmart the potter?

In 1996 and 1997, chess champion Garry Kasparov battled the IBM computer Deep Blue in a six-game chess match. The cover of *Newsweek* called it "The Brain's Last Stand." Kasparov lost. And after licking his wounds, he reflected on the match years later, and called the "machine's triumph" a "human triumph," because Deep Blue was a human creation.[8] And then he went on to say this about the relationship between the potter and the clay: "Machines have calculations. We have understanding," he said. "Machines have instructions. We have purpose. Machines have objectivity. We have passion. We should not worry about what our machines can do today," he said. "Instead, we should worry about what they still cannot do today, because we will need the help of the new, intelligent machines to turn our grandest dreams into reality. … There's one thing *only* a human can do," he said. "[And] that's dream."

When Jeremiah speaks of God and humans as potter and clay, I think he imagines this sort of relationship: interactive teammates, creative partners. God, the potter, "bent to the wheel," in the words of Sally Brown, "clay spattered from head to foot, sensitive hands pressing and shaping and spinning the clay to draw forth something useful and beautiful" in response to our dreams. And, actually, the image is sharper in scripture, since God *also* inspires *us* to dream. Who can forget that inspiring and grand image in the Book of Genesis when God takes Abraham by the hand and points to the night sky's countless stars, saying "so shall your descendants be" and "through you, I will bless all the families of the earth?" And who can forget that inspiring image in the creation story, when God molds Adam and Eve, like a potter at the wheel, and then breathes the divine spirit into them so they can care for the earth? And who can forget the deep emotion and passion of Jesus - Jesus, God-in-flesh - when he flashes anger at injustice, toppling the tables of money-changers, or when he cries out in pain on the cross, or when he inspires his followers to share a table with strangers and outcasts and heals the unlovable, or when he challenges his followers in today's gospel reading to prune their lives and follow his way, so they can flourish? A longstanding image of God in Jewish and Christian history, going all the way back to Aristotle, is that God doesn't feel emotion and that God's plan is set in stone. But Jeremiah's potter and clay image shows us something different - something inspiring: a God who interacts with us, is on the same team as us, is a creative partner with us; a God who can dream and can inspire *us* to dream; a God who became one of us - with emotion and passion, an Artisan who responds to the movements of the clay, patiently shaping the lump into what St. Paul once called "the image of Christ"; a Divine Potter who feels and grieves and laughs and loves and delights as the wheel spins and the clay takes shape.

Which brings me back to Nick Cave and his response to Peter's question: Can AI ever write a good song? "It is perfectly conceivable," writes Cave, "that AI could produce a song as good as Nirvana's 'Smells Like Teen Spirit,' for example, and that it ticked all the boxes required to make us feel what a song like that should make us feel … . It is also feasible that AI could produce a song that makes us feel these same feelings, but more intensely than any human songwriter could do. But," he goes on, "I don't feel that when we listen to 'Smells Like Teen Spirit' it is only the song that we are listening to. It feels to me, that what we are

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8 https://www.ted.com/talks/garry_kasparov_don_t_fear_intelligent_machines_work_with_them/transcript?referrer=playlist-talks_on_artificial_intelligen#t-255488

actually listening to is [the unique voice of the songwriter, Kurt Cobain,] a withdrawn and alienated young man … - a young man who by any measure was a walking bundle of dysfunction and human limitation - a young man who had the temerity to howl his particular pain into a microphone and in doing so, by way of the heavens, reach[ed] into the hearts of a generation." Cave continues with these words: When we listen to great songs, "We are listening to Beethoven compose the Ninth Symphony while almost totally deaf. We are listening to Prince, that tiny cluster of purple atoms, singing in the pouring rain at the Super Bowl and blowing everyone's minds. We are listening to Nina Simone stuff all her rage and disappointment into the most tender of love songs. We are listening to Paganini continue to play his Stradivarius as the strings snapped. We are listening to Jimi Hendrix kneel and set fire to his own instrument. What we are actually listening to," says Cave, "is human limitation and the audacity to transcend it. Artificial Intelligence," he says, "for all its unlimited potential, simply doesn't have this capacity. How could it? … So to answer your question, Peter, AI would have the capacity to write a good song, but not a great one. It lacks the nerve."

...The same year that Garry Kasparov was fighting for his chess life against Deep Blue, Sarah Brightman and Andrea Boccelli were singing on stage. "Time to Say Goodbye" is a good song. What made it a great song that day, was the passion, the emotion, the spirit of the human singers. When we contribute to our world - in our various creative ways - when we use our gifts and talents and skills to make this world a little better, to bring smiles to people's faces and tears of joy streaming from their eyes, I think God the Potter smiles in wonder. Amen.