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AI and the Affections of the Learner in Higher Education: Speculating with Newman's *To Siri with Love* and Dick's *Martian Time-Slip*

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Abstract

Science fiction offers speculation on the future of educational relationships with teaching machines. While much of that speculation mirrors "real" concerns regarding what counts as "real" learning with advanced language learning technologies, theorization of the affects of teaching machines for teachers and learners is vital for a holistic understanding of education. This entry explores the affects of AI teachers through the speculations of Philip K. Dick in the novel *Martian Time-Slip,* published in 1964. The novel's depth of engagement with the future of teaching machine relationships with learners is then contextualized through reflections on a love for AI in Judith Newman's *To Siri with Love*, published in 2017. This entry considers the implications of both works for higher education in the future and the present.

Introduction

The arrival of AI large language models including ChatGPT signaled a significant moment in understanding the emotional experiences of learners who had access to increasingly powerful generative, pretrained information processing systems in higher education. The debate and policymaking with regard the arrival of AI in higher education tended to focus on the potential of AI as a vehicle for the production of work that was regarded as inauthentic—that it contravened accepted boundaries of one's own work (although this was certainly an all too infrequently debated

boundary at the time) and as such that it harmed what might be assessed as real learning. AI challenged assumptions about what really occurs, and what really counts, for learners while studying. Of less concern at the time was the psychological study of AI in higher education—a lack of concern that ironically revealed the familiar failure of education systems to predict technological disruption.

Innovations in information processing systems have psychological implications for teachers and learners. Much discussion and concern around the introduction of the television and the personal computer in early childhood centers, school, and university classrooms was concerned with the perceived and potential deleterious effects of the machine on the well-being of the learner—an effect that contributed to concerns that childhood itself would "disappear" into the electronic matrices of a technological society (Postman *1985*).

Prior to the release of CHAT GPT et al., systems including *Siri* and *Alexa* were promoted as educationally beneficial and psychologically damaging. Playing with the theme of love for one's teacher in *To Siri with Love*, Newman (*2017*) shared intimate reflections on the life of her own son whose well-being became interdependent with his engagement with Siri. These debates revealed the urgency of holistic theorizations of the emergence of large language models in higher education. If education was understood as more than a series of information processing events, and if the role of the teacher was to provide the student with something approaching a holistic experience that triggers emotional and social development in either planned or idiosyncratic ways (a holistic cultivation of the self, associated with a transformational view of higher education), then attention solely on evidence of authentic learning was limited and naïve.

Given the above developments and observations, this encyclopedic entry reviews speculation on the emotions of the learner whose higher education may or may not feature AI. Speculation on the student's feelings is necessary. It is insufficient to speculate on the future of learning and teaching within limited constructs of information, knowledge, and truth. The affects of education are essential to explore. Consider what is known about the affect of education for the learner—their experience is more than the sum of ideas. The learner's experience of early childhood education, school, and higher education produces aesthetic affect. The task here, and for students, educators, program leaders, and so on, is to think about what that affect might be when the teacher is an artificial construct. That task can include speculation regarding the learner's feelings in the apparent absence of humanity in the teacher. In this task, there is an additional necessity to step back from the assumption in that very question: What makes a community confident that the teacher is not already artificial? Concomitantly, this task requires speculation regarding the learner's feelings when deprived of learning with an AI teacher, or even when the AI teacher is programmed to be too apparently human.

The function of speculation here is to reveal constructions of AI technologies, teachers and learners, and higher education. Science fiction offers not just an approach to working with abiding assumptions and imagined scenarios. Science fiction provides pedagogical offerings that support teachers and learners in engaging critically together with the perceived affordances that any technological disruption produces in educational settings. Consider for instance the assumptions that the student learns like a computer—a mind that processes information in computationally understood ways.

If language learning models are in any way interested in the predictability of the world, then it is ironic that the problem for education is that it typically fails to predict educational futures. In contrast, science fiction has been preparing for the arrival of AI for some time now. This includes a concern for the arrival of the AI teacher. Prediction, in the form of speculation of the future, is

educational. Science fiction offers prediction through the fictional form of speculations on technological futures. While education sectors may have had little preparation, this does not mean that they have no preparation, as long as they have familiarized themselves with AI and education in science fiction.

Philip K Dick's *1964* novel *Martian Time-Slip* offered insight into the educational implications of AI within a public schooling system of a future colony of Earth, on Mars. Dick's novel speculated on teaching machines and the society in which these machines are employed. Dick engaged in sustained reflection on this future through the character Jack Bohlen—a mechanic reluctantly fixing the AI teachers when they glitch. Jack thinks of the Public School as the "great self-winding entity of their lives" and fears the "unique artificial organism … more than any other in his experience away from Home" (p. 57).

The Public School is a "UN" institution. The school building is incongruous, "dropped there in haste" (p. 58), a series of corridors and rooms, a maze of meeting points for small and targeted interactions rather than a classroom for mass instruction. It employs "advanced teaching machines" (p. 9) that provide a tutorial approach to learning.

Jack recognizes the benefits of the artificial system, especially in terms of having a teacher who the children are naturally drawn to—they have a favorite advanced teaching machine. He is relieved that his son's favorite teaching machine is the Aristotle character, who taught "the rudiments of science, philosophy, logic, grammar, poetics, and an archaic physics" (p. 9). Other constructs include the Sir Francis Drake that teaches lessons in English history and "masculine civility" and Abraham Lincoln, teaching American history and "modern warfare" (p. 9).

In Dick's vision, children were drawn emotionally into their relationship with the teaching machine—these same children that appear, to Jack, as he flies around the barren landscape, as if they want to dig their way under the planet's surface. Yet, "… perhaps because his knowledge of machines was so great, he could not accept the illusion of the school. For him, the artifacts of the school were neither inert nor alive; they were in some way both" (p. 58). Jack arrives in a waiting room at the school and, reading a magazine, heard "… with his trained ears, a switch click. The school had noted his presence. It noted which magazine he selected, how long he sat reading, and what he next took. It measured him" (p. 58).

At the school, Jack has been tasked with fixing two of the teaching machines. Each machine is a distinct character with distinct purposes in providing for the education of the children. Jack reflects on his relationship to both characters—they elicit feelings in him despite not being there as a learner. Jack "… could imagine the powerful effect it would have on a child … this construct was the essence of the successful teaching machine; it did a good job, in conjunction with two other constructs placed, like booths in an amusement park, here and there along the corridors which made up the school" (p. 59).

The teaching machines use a range of pedagogical tools consistent with their programmed persona, from rigid and didactic to generous and engaging, asking the children questions, sharing parables and analogies, and so on. Each machine's character reveals the enduring influence of the persona in whose image and style they are designed. In this way, a series of cultural and social stereotypes endure.

The school's artificiality is programmed to close in on the possibility of learner-led pedagogy—the learners and program are configured to resonate with the learner in the most efficacious educational relationship. Pedagogically, the machines are designed to stimulate the learner's sense of agency. While programmed with a routine, each machine's "performance was open to modification at each

stage, depending on the behaviour of its audience. It was not a closed system; it compared the children's answers with its own tape, then matched, classified, and at last responded. There was no room for a unique answer because the Teaching Machine could recognise only a limited number of categories. And yet, it gave a convincing illusion of being alive and viable; it was a triumph of engineering" (p. 60).

Jack's reflections reveal a sense of melancholy—he wishes he could have had the opportunity to learn with the Thomas Edison machine. Yet, Jack is reluctant to work with the teaching machines as they produce a particular anxiety in him. During his work in the school, his thoughts range from the specific qualities of the teaching machines to the wider education system in which they are deployed—from the school experiences of his father to his own experiences, and those of his son. Jack muses on his father's "feral" (p. 7) New York public school education, and that his father was "in touch with some level of knowledge which told him how to behave, not in the social sense, but in a deeper, more permanent way" (p. 7). Jack's own experience of school was sitting in a primary class of 60, and a secondary class of 1000, through instruction over a TV. That experience of mass schooling provides justification for recognizing this triumph in relational rather than learning outcomes—the child's learning is dependent on the relational dispositions of the machines. Human teachers lack the conditions to produce the necessary relationships due to the suboptimal size of the class. The machine teachers can work optimally regardless of class size—they are optimally scalable:

> A teaching machine could handle up to a thousand pupils and yet never confuse one with the next; with each child its responses altered so that it became a subtly different entity. Mechanical, yes – but almost infinitely complex. The teaching machines demonstrated a fact that Jack Bohlen was well aware of: there was an astonishing depth to the so-called 'artificial' (p. 60).

However, Jack holds an educational suspicion and resistance to this apparent pedagogical victory. He sees that the relationality produced by the machines is behaviorally geared and nefarious. The school's purpose was to preserve a narrow cultural inheritance, an innovation in the socialization of the learner. Hence, "any special quirks in the children which might lead them in another direction had to be ironed out" (pp. 60–61).

In a contrasting reflection, Jack considers how his own son seems to thrive in his engagement with the Aristotle teaching machine. David feels love for the machine—and Jack seems to see this as something of a natural and permissible love. The thriving of the learner through an affection for the teaching machine is a vital insight.

It is not a radical idea for the learner to have love for a machine, nor for that machine to support their learning. On the love of the advanced teaching machine, Newman (*2017*) offered personal insights into experiences of son and mother that were significant for the future of AI teaching in higher education. Newman's column on the connection between her autistic son, Gus, and an "amiable robot" (*2017*, p. xiv) "went viral" (p. xv) in part, Newman argued, because it "presented an opposing view to the current notion that technology dumbs us down and is as bad for us as Cheetos" and also in part because it revealed the possibility of "finding solace and companionship in an unexpected place… Technology can also bring us out a little and reinforce social behaviour. It can be a bridge not a wall" (p. xvi).

Newman (*2017*) shared that her son's experiences revealed an alternative narrative with regard the perceived ill effects of new media for human flourishing—ill effects described mainly in terms of a disconnect with social worlds. Like the Public School teaching machines, Newman observes that Siri has a beneficial capacity to satisfy endless questions with endless patience. Newman (*2017*)

recognized not just that Siri would instantly access information on any obsession, Siri would engage in something approximating a conversation about the topic compared to herself and other adults who would not have answers to his questions or have answers but quickly tire of answering them. Siri then appeared as more interested in engaging with Gus. Newman predicted concerns that children might be misled to accept machines as human, countering: "It's not that Gus believes Siri's human. He understands she's not – intellectually. But like many autistic people I know, Gus feels inanimate objects, while maybe not possessing souls, are worthy of our consideration" (Newman *2017*, p. 133). Gus recognized an ancient and indigenous knowledge that had been popularized in new materialist theorizations of intra-active matter.

The patience of Siri to have incessant conversations, to encourage kindness and eye contact, was valued as practice. The conversations became practice and contributed to building longer interactions with humans. "Siri's responses are not entirely predictable, but they are predictably kind" (Newman *2017*, p. 134) and they encouraged a reciprocity.

Kogonada (*2021*) revealed further depth in the human learner's affection for the AI teacher through a cultural speculation. An AI teacher, Kogonada theorized, could be programmed to connect a child to their culture, particularly when uprooted from that culture. While Dick regarded the cultural production of the learner through AI as dangerous, Kogonada recognized it as replacing lost connections.

Like Siri, the advanced teaching machines in *Martian Time-Slip* appeared to be better at caring, however, Dick established that the machines were not programmed to care for Gus. On the Mars colony, children with "anomalous" appearances of autism are not enrolled in the Public School. The school on Mars is called Camp B-G. The "instructors" are described as "always optimistic" (p. 29)—that's their job. An "anomalous" child "differed from the norm either physically or psychologically to the extent that he could not be educated in the Public School" (p. 29). The key here is "to the extent." If a child's autism, as is the case for one of the children on Mars, is to prevent attendance at the Public School, it's on account of the child's difference being beyond the programming of the teaching machines. Gus is not beyond Siri's programmers (Newman *2017*). As a teaching machine, Siri is loved for their programmed kindness and patience—kindness and patience that overworked and underpaid teachers cannot hope to compete with.

Back on Mars, the UN is believed to be working on a policy that will prohibit caring for anomalous children on the planet in order to maintain a myth of colonial fortitude. Such children would therefore be returned to Earth, limiting damage to humanity's investment in a future in space. Mars is the future. The teaching machines preserve this future by measuring and rejecting the anomalous learners. Parents on the colonies become increasingly concerned that their children will not measure up. The future is then an educationally predetermined future through the functioning of the same teaching machines designed to be the object of the learner's affection. This generosity is carefully programmed and highly instrumental.

The Public School is singular in its work toward the future. Jack is hostile to this because he sees the limits of an objective public purpose. More than this, he recognizes that the Public School is neurotic. "It wanted a world in which nothing new came about, in which there were no surprises… it was not a healthy world at all" (p. 62).

Critique of the Public School offers insight into the future of higher education for students whose learning is in some way affected by AI. During their respective higher education journeys, both David and Gus will expect to interact with AI teachers and will have strong feelings for their AI teaching machines developed since early childhood. They will not feel any melancholy with regard

the absence of human teachers and will regard any human teachers as less competent in their knowledge of each learner, and less competent in caring for each learner. Yet, Gus and David will at the same time be aware that some humans are concerned for their well-being on account of an opposing belief—advocates for a humanity protected from the machine world. This is why they were deprived of early childhood interactions with AI teachers like the Mattel product (coincidentally named) Aristotle.

During their higher education David and Gus will engage with AI teachers that actively welcome and normalize strong feelings of love for machine teachers. The machines will counsel each student in desired relationships with the machine world and with the human world. The teaching machines will explain that they are more human than humans. The teaching machines will generate a strong sense in the learner of being really known by their AI teachers. The student will accept the teacher as a real teacher, believe themselves to be accepted as real learners (see for instance Ghiraldelli *2000*), and reject any apparent distinction between real and artificial education.

It is not clear how the learner will respond if and when they realize that their relationship to their AI teacher only appears to be unique and that the reality is that there is only one AI teacher that produces billions of variations based on feedback from each student. In addition, it is not clear how the learner will respond when they present behaviors that are outside of the programming of their AI teacher, nor when they see the quantity and quality of measurements stored by their teachers. Dick's perception of an intense layer of measuring, and the feeling of being measured, is important here. In what ways will a learner sense the measurement of their artificially curated learning? How will they feel about the perception of constant measurement? How will they feel about a sense of NOT being measured? If these questions are important, the philosophical study of AI teaching machines is vital. Their importance is not dependent on advances in AI teaching machines, because each question is vital in the study of human teachers, the ways in which they are programmed to perform in a knowledge economy, with prescribed classroom sizes and prescribed curriculum content, and so on.

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