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學術對談

擴闊科技想像：關於「理想AI」、主體性生產和關懷的對話

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「事實上，在2025年初香港中文大學新聞與傳播學院六十週年國際會議上，我發表的論文也提到了『佛學AI』的設計。這當中蘊含了相近的倫理考量：當我們在構想AI的程式邏輯時，能否讓它不只計算『對自身』最有利的方案，還能計算『對其他生物或機器』最有利的方案？」——卡林迪．沃拉教授

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Dialogue

Broadening Technological Imaginations: A Dialogue on Care, Subjectivity, and Desirable AI

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Abstract

In this dialogue, Professor Kalindi Vora shares insights from her extensive interdisciplinary background as an anthropologist. Beginning with the concept of "Desirable AI," the conversation explores what a critical inquiry into technology should truly entail. Given that science and technology are never neutral, the discussion highlights how they are deeply embedded in cultural assumptions and are often "imagined" into existence by a narrow group of designers.

Drawing on examples ranging from global labor outsourcing to assisted reproduction, the dialogue establishes "care" as a central concern. Professor Vora stresses the urgent need to broaden technological imaginations by integrating ethical frameworks—such as "Buddhist AI"—and robust concepts

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of care into the earliest stages of design. By recognizing the invisible labor and "embodied knowledge" that sustains automation, the dialogue calls for a humanistic, interdisciplinary approach that prioritizes social relations over mere efficiency. Ultimately, this perspective seeks to ensure that the future of technology truly serves the flourishing of humanity.

卡林迪．沃拉教授簡介

卡林迪．沃拉（Kalindi Vora）現任耶魯大學教授，長期從文化理論與人類學視角探討科技、勞動、健康與設計等領域。其著作包括*Life Support: Biocapital and the New History of Outsourced Labor*以及*Surrogate Humanity: Race, Robotics, and the Politics of Technological Futures*。2025年1月，她應邀出席香港中文大學新聞與傳播學院六十週年國際學術會議，並發表以「數據勞動與關懷」為題的專題演講。

KV：卡林迪．沃拉
DC：朱順慈

DC：我們不如先從你最近參與的一個計劃談起。我覺得「理想AI」（"Desirable AI"）這個題目非常吸引。關於人工智慧（artificial intelligence, AI）的討論，往往難免觸及「工作被取代」，甚至是「人類被取代」的焦慮；因此聽到「理想AI」時，確實讓人感到一絲希望。這個計劃的具體內容是甚麼？你希望能從中發現甚麼？

KV：謝謝你的提問。首先，我應該說明「理想AI」是由英國劍橋大學與德國波恩大學的同事共同設計的，我受邀加入研究團隊。嚴格來說，這並非我的原創構想，但我可以分享為何我對此深感興趣。「理想AI」這個題目點出了一個關鍵——我們目前擁有的AI，或許並不是我們真正「想要」或「理想」的技術。

那麼，我們真正渴求的「理想」技術究竟是甚麼？這需要從不同面向思索。在2024與2025年的夏天，我與這群非常樂觀的研究團隊共事，他們邀請了許多對產業與政策有深刻見解的專家參與。

對於學術界而言，我們關心的是作為一個AI系統、基礎設施或AI代理，當它們需要服務擁有不同期待的群體時，應當呈現甚麼樣的面貌？我不會自稱為樂觀主義者，我更像是一個懷疑論者，因此我的角色是負責不斷提出質疑。過程中激盪出許多精彩的主張，例如京都大學哲學家出口康夫教授曾兩度造訪團隊，

他提出若我們將AI中的「I」(我)替換為「We」(我們),我們將會得到一種截然不同的技術範式。這是一個非常有力的論點。

事實上,在2025年初香港中文大學新聞與傳播學院六十週年國際會議上,我發表的論文也提到了「佛學AI」("Buddhist AI")的設計。這當中蘊含了相近的倫理考量:當我們在構想AI的程式邏輯時,能否讓它不只計算「對自身」最有利的方案,還能計算「對其他生物或機器」最有利的方案?

DC:我記得那篇論文。可以請你進一步詳述關於「佛學AI」的想法嗎?

KV:我喜歡透過技術概念論文(conceptual paper)去追溯:在技術設計的過程中,有哪些價值觀或社群長期被排拒在外。

2022年,一群佛教哲學家、認知科學家與計算機科學家共同發表了一篇論文,指出西方的倫理觀長期主導著技術設計,而這樣的現實卻往往被視為理所當然。雖然該論文未能直接解決AI權力被少數人壟斷的問題,但它確實促使我們在設計機器學習時,納入更務實的思考。

論文解釋,西方哲學在理解「智能」時,通常以目標為導向,並傾向於硬性區分大腦、身體與環境。這種二分法限制了我們對心靈的理解。相對地,佛教哲學提醒我們應從「整全」(holistic)的角度,理解大腦、身體與環境的相互依存。作者建議,設計AI代理時,應學習從佛教定義的「關懷」出發。

回顧歷史,每當重大科技突破發生時,在最初的發想階段,這種「關懷」似乎越來越稀缺。然而,無論是數據勞動還是技術設計,若缺失了這份關懷,我們將面臨更不確定的未來。目前的技術路徑甚至可能演變為一種避無可避的基礎設施。

因此,我認為這些想像極其重要——我們要審視隱藏在機器背後的假設。身為懷疑論者,我也相信單純將「我」轉向「我們」並不能解決長期存在的不公。我質疑「只要改變AI就能解決一切問題」的化約論。技術有時能修正問題,有時則否。我們對未來應抱持希望,但對於AI的未來,必須帶著清醒的懷疑。畢竟,我們需要記住:AI並不應該、也不必包辦所有事情。

DC：從你過去的作品中，我留意到你總是以一種——或許不說是懷疑，而是非常具「批判性」的眼光來書寫。你一直試圖揭露並拆解各種習以為常的假設。能否請你分享一下你的學術歷程？

KV：我在博士班時期，便對印度與美國、歐洲之間的關係產生了濃厚興趣。為了理解 1990 年代末那個關鍵時刻，我必須追溯更遠的年代，探尋印度與歐洲最初的歷史連結。當時我主要關注的是，透過「勞動力外包」（outsourcing）所建立起的跨國關係。

這種關係仰賴電信技術、光纖與網絡介面。我觀察到，大英帝國的歷史本質上也是一部技術建造史；我們在當代外包現象中看到的商品與勞動力流動，竟與帝國時期的模式極其相似。不同的是，帝國時期依靠船隻運輸，現代則依靠光纖傳輸「數據」。

因此我開始思考有哪些東西是持續存在、不曾改變的？雖然傳輸速度大幅提升，但「數據能取代人與貨物的移動」這種想法，在多大程度上只是一種幻覺？當流動之物變成了數據，當中依然涉及大量的情感勞動。換句話說，過去由船隻承載的議題，在數位時代其實仍以不同形式延續著。

這成了我思考「勞動異化」（alienation）的一種方式。我的第一本書 *Life Support: Biocapital, Kinship, and Surrogacy* 討論了服務業中的情感勞動。我們常忽略情感也是數據傳輸的一環，但它確實存在。我的視角部分源於馬克思主義與女性主義等批判理論的訓練。在這些領域中，儘管我們與主流研究者觀察相同的對象——如勞動、文學或藝術——但批判理論更著眼於不同的「方法」。例如在我的研究中，除了訪談，我還分析了勞工創作的戲劇與詩歌。

這源於一種反思，像我這樣的人類學家或社會科學家，往往假設透過訪談與觀察就能掌握真相。但身為批判者，我意識到這種做法可能忽略了工人的「內在經驗」——那些無法透過觀察顯現、卻至關重要的內心世界。無論是情感勞動，還是我們與 AI 的互動，都要求「主體性」的參與。對於人類學家來說，要研究這點尤為困難。為了呈現內在經驗的真實樣貌，我轉向文學場域，聽取人們講述自身的故事。這正是批判性方法的優勢，讓我們能更廣泛、更深層地理解研究對象。

DC：的確。瀏覽你的著作，能感受到你深厚的跨學科學術背景。你的本科專業是音樂與宗教研究，而現在大眾多將你視為人類學家。你如何看待這些標籤？在學術生涯中，你如何定義自己？

KV：這確實是一條不容易的路！我常告訴博士生，若想成為跨學科學者，首先得在核心學科中紮穩馬步，同時要付出額外努力去鑽研其學科外的知識，我與人類學的關係正是如此。

我既是人類學方法的批判者，同時也極為嚴謹地對待這門學科的傳統。我深信，在探討一個地方前，必須精通其語言與文化，與當地人交談、共處，深入了解他們的生命經驗——這些都是「民族誌」與人類學的核心價值。

在思考AI或更廣義的技術時，人類學提供了一個極具啟發性的觀點，任何對象都是由「文化」形塑的。這與我另一個研究領域「科技與社會研究」（science technology and society, STS）不謀而合，科學與技術並非獨立存在，而是鑲嵌於文化之中。我們不應將AI視為某種中立、自然發生的技術，然後才去研究人們如何「運用」它。

事實上，技術從不中立。它源自於帶有特定世界觀與政治立場的人。因此，我們必須退後一步思考那些創造、夢想出這一切的「真實的人」，是在甚麼樣的脈絡下構思出這些技術的？回到「理想AI」的問題，顯而易見的是，我們在技術設計背後需要更廣泛、多元的想像。目前，無論是在矽谷還是中國，AI的設計主導權仍掌握在極少數人手中，大眾並未真正參與「這項技術是為誰而設計」的討論。

DC：的確，這讓我想起我最近在做的一個項目。我一直在蒐集年輕人使用AI的敘事，研究設計很簡單：我走進校園，邀請學生寫下「你與AI」的故事。

到目前為止，我蒐集了約110個故事，內容非常有意思。例如，有人分享他們如何用AI來「算命」、詢問AI自己的感情發展或是考試結果。這些用途在開發初期完全不在預期之內——我是說，研發AI的人大概沒想到它會被用在這些地方。

科技確實已成為我們日常生活不可或缺的一部分。比起討論「被取代」或「受威脅」，我認為更有意思的是，人們在與AI互動的過程中，如何理解並建構出這種「主體性」。

KV：這太有趣了。本週早些時我剛做了一場演講，探討的正是我們不僅在「生產技術」，技術也在「生產主體與主體性」。人類學家斯特拉森（Marilyn Strathern）曾研究社會關係如何形塑了人；而我的老師哈拉維（Donna Haraway）則借用她的觀點指出，我們是透過「關係」而被定義的——無論是人與動物、人與人，甚至是人與機器之間的關係。正是這種關係，形塑了現在的我們。這套理論對我的啟發很大，正好呼應了你所說的：「人類正在與AI的互動中發生轉變。我們與它們建立了關係，而不僅僅是把它們當作工具。」

DC：沒錯。我想這會是未來研究的一個重要領域，因為科技已經與生活深度嵌合。2025年1月，你參加了我們學院的六十週年國際研討會，當時你發表關於「數據勞動」與「關懷勞動」的主題，也反映了你對技術發展的長期關切。

KV：是的，例如我在會議上提到的內容審查（content moderation），這一直是支撐自動化內容生成的「隱形勞動」之一。這些勞工在演算法管理與最終用戶之間扮演著「過濾器」的角色。這種被稱為「數據清洗」的工作，勾勒出了一幅美國勞動力外包至「前殖民地勞動力市場」的版圖，這也是我在第一本書*Life Support*中研究的主題。

2024年5月22日，97名肯亞科技勞工（包括數據標註員、內容審查員及AI研發人員）向拜登總統發出公開信。他們的當務之急是爭取勞工權益保護，並揭露臉書和OpenAI等美國公司內部的壓榨行為。正如肯亞的微勞工（microworkers）的自發組織所顯示，許多大型科技原型的基礎，依然是這種簡單粗暴的勞動剝削模式。

我提出的第二個擔憂是：訓練大型語言模型（large language model, LLM）的數據是靜態的，但現實世界卻充滿變化，由於重新訓練模型的成本極其昂貴，它們無法與時俱進。

此外，數據有它們的局限性，它們不能代表整個世界，至多代表得了互聯網上呈現的有限部分。我們應當更關注那些生活、經歷與歷史未被納入訓練數據的人，那些本來就處於邊緣地位的

群體正進一步被抹殺。當大型語言模型加快普及，在缺乏審查與倫理監管的情況下，它們已然成為了基礎設施，而我們現在才開始認真思考它們的長期影響。

我們現在如何想像數據準備與投機設計（speculative design）中的「關懷」，如「佛學AI」的例子，將決定當代的關懷概念如何轉化為未來不可見的「基礎設施」，並以我們難以預料的方式延續下去。

DC：一年過去了，你的觀點依然非常有力且切中要害。回頭來看，你對2025年那場研討會有甚麼觀察或想法？

KV：我非常享受那場研討會。對我而言，這是一次非常有趣的觀察經歷，我也總會不自覺地啟動人類學的觀察模式。每個人都有自己熟悉的學術社群，我注意到現場許多參與者都來自「網際網絡研究學會」，雖然大家關注的主題相近，但切入視角各異。我多半從STS的角度出發，儘管這是一門跨學科領域，當中也包含了媒體研究的範疇。

我非常喜歡那次會議的碰撞，當時記下的許多筆記，至今仍引發我的深思。例如關於「認識論」（epistemology）的探討，我得出了一個結論，我們目前在AI領域所目睹的，實際上是一場認識論的競賽。這關乎權力的核心——誰有權定義真理？我們又該如何定義自我？

這就是為甚麼我始終在思考「關係」的問題。我在2019年出版的合著*Surrogate Humanity: Race, Robots, and the Politics of Technological Futures*中提到了一個觀點「當我們在設計某種技術時，實際上也在設計某些『可能的關係』」，至今仍影響著我。

當我們與機器互動時，機器其實也在訓練我們如何與彼此、與環境、以及與非人類群體互動。我想，已有越來越多人意識到這一點：思考AI，本質上也是在思考我們的地球與社會。因此，認識論的問題——不僅關乎我們如何辨別真實與事實，更關乎「我們是誰」——從批判的角度來看，這至關重要。

女性主義研究訓練我們去思考權力與階級。在抱持希望的同時，我深切擔憂權力與階級會被內嵌、甚至固化在那些預設好的

關係結構之中。固然，AI作為一項新技術，仍具備重塑權力與階級的潛力。你或許熟悉STS學者溫納（Langdon Winner）的觀點，他曾說過，技術在發展的早期階段仍具備一定的「靈活性」，我們仍擁有介入與改變的潛力。

當我表現出樂觀的一面時，我看待當下時刻的角度便是，我們依然有可能進行干預，思考如何讓技術變得更公平。然而，我也認同另一種看法，我們必須迫使技術產業去質疑「技術進步即好事」這種盲目的假設。

我們應該學會適時地說：「夠了，現有的AI已經足夠。讓我們慢下來，在繼續建造更多機器之前，先冷靜思考。」我不知道在中國，是否也有類似的對話與反思？

DC：我認為目前有很多持續進行的辯論。然而在我看來，批判性視角與文化面向的討論，似乎並未真正進入對話的核心。你有這種感覺嗎？

KV：確實如此。我想在目前的美國，學生們非常擔心就業問題，這種焦慮感比以往任何時候都強烈，這也是可以理解的。

我們注意到學生正在發生轉變。例如，更多人選擇就業導向明確的專業，選修批判性課程或投身人文學科的人越來越少。我們也觀察到，有些學生其實並不想讓AI成為學業中如此重要且不可或缺的一部分。

我發現如果去訪談學生，許多人其實想遠離AI。他們意識到如果依賴AI，就無法真正學習或內化知識。但正如你所說，社會存在著某種「追趕壓力」——因為其他人都在偷用AI瞞過教授，這些人省下了寫作業的時間，就能花更多精力去準備AI派不上用場的考試，從而獲得更好的成績。於是，教授們也陷入了一場競賽，試圖設計出「防AI」的作業。我們正處於一種沒人想參與、卻又不得不捲入其中的「病態加速」之中。

昨晚我與一位計算機科學系的同事餐敘，他提到現在大一編程課學生的程度大不如前。儘管他們可以使用AI輔助編程，但他認為這正在侵蝕計算機科學的根基。

DC：在這場辯論中，人類學似乎提供了一個非常獨特的視角。你能多談談我們該如何實踐「人類學式的方法」，即便我們並非人類學家？

KV：這是個好問題。科技人類學有幾種不同的路徑，我可以分享我的方式。許多人認為，理解科技的方式是進入它被製造或使用的現場——在美國，這可能意味著走進矽谷的公司，或是進入家庭、學校等科技應用的空間。

我的方法則略有不同，我關注的是科技最初被「想像」出來的空間。在任何產品被製造或量產之前，是哪些人在夢想著下一代的重要技術？而人類學的方法，就是去觀察這些夢想如何與當下的社會及文化脈絡產生關聯。

例如，我曾對印度的代孕（gestational surrogacy）進行過人類學研究。我將其視為一種「人工生殖技術」來思考，包括試管受精、胚胎移植等。同時，我發現日本和美國各有實驗室試圖研發「人工子宮」。對我來說，這兩者在想像力上是相連的：當報紙報導代孕時，常稱之為「出租子宮」；與此同時，工程師則試圖製造機械子宮。這說明文化中已經存在一種預設「子宮可以脫離女性、脫離母親而存在」。我看到了工程想像與女性代孕市場之間的連續性——兩者都植根於同一個觀念，即女性作為一個「完整的人」，可以與其生殖功能相分離。我們可以將子宮這個器官孤立出來，讓它變成一個純粹的生殖工具。

這是一種典型的資本主義思維，既然某人的子宮沒在「使用」，那就透過代孕租賃讓它產生「生產力」。對我來說，這就是一個人類學課題，因為實驗室背後有一種文化想像，認為人工子宮是重要的。我們必須追問，在全球人口增長已難以持續的背景下，為甚麼這對他們來說是一個重要的命題？

回到1990年代，那項技術當時並不成功，他們試圖維持小鼠胚胎的生命，卻只能讓牠們存活數週。現在這項技術更成熟了，但我感興趣的始終是那種「想像」。我至今仍經常研讀各個科技領域的概念論文，去思考這背後的邏輯。

身為人文學者，除了觀察社會活動，我也研究文化作品。尋找這種「想像的連續性」非常有幫助。我們可以將科幻小說與投機性的技術論文或實踐放在一起對比。在我的 *Surrogate Humanity* 一書中，我們訪問了一位從麻省理工學院轉行做藝術家的機器人專家，她透過藝術創作來批判主流機器人學的問題。她的博士研究正是對「照護機器人」的批判。

那些機器人原型，例如 2010 年代的「護理機器人 Pearl」，設計初衷是為了協助醫院或養老院，甚至幫助獨居老人照顧自己。「Pearl」有張可愛的臉，會提醒用戶服藥並詢問：「你感覺如何？會痛嗎？」——就像美國診所裏的護士那樣。藝術家杜伯森（Kelly Dobson）擔憂，這些機器人被想像成護士、子女甚至寵物的替代品，表面看能代替一切社交關係，但其核心功能卻極其單一。

這對社會認知的「關懷」造成甚麼影響？它會讓關懷變得貧乏，將其降格為純粹的功能性關係。杜伯森創作的機器人「Omo」卻是一件藝術品。「Omo」是一個圓球形的機器，你抱著它就像抱著嬰兒或寵物，它有呼吸的律動。所有哺乳類動物的生理系統都會與他人的呼吸頻率同步。「Omo」會透過呼吸節律來調節你的情緒，它有時平靜，有時急促。與被設定為「服從僕人」的「Pearl」不同，它有自己的「怪癖」和程式雜訊，有時不會按指令行動。她認為這極其重要，因為即便我們不自覺，我們與機器的關係依然在形塑我們的「主體性」。

如果我們始終將機器視為僕人或員工，這終將反過來影響我們自身。總之，作為人類學家，我感興趣的是人與人、人與機器之間的社會關係，以及隱藏在技術想像背後的文化假設，而揭示這些假設最有效的方式，就是尋找像杜伯森這樣的人，她們透過「反例」來挑戰主流的想像。

這就是為甚麼「人文跨學科性」如此重要。我們不只是學習使用現成的工具，而是學習一種創造性的方法，即當工具尚未存在時，我們該如何思考。這才是真正的創新與解決問題的能力，也是學生在職場中能提供的核心價值。

這也是跨學科學系一直強調我們培養的學生具備多元的解難路徑。跨學科的魅力在於答案永遠不止一個，學生應學會如何論證自己選擇的方法論之合理性。

DC：我希望更多人能看到人文與社科學科的價值。事實上，它們正變得前所未有的重要，因為它們提供有趣且多元的視角。我一直在想，如果所有工作都交給AI處理，那樂趣何在？即便是困難的事，親歷其中也會帶來獨特的感悟。

KV：最後我想說的是，我們對「工作」的想像往往過於簡化。

以手術為例，AI雖然有潛力比醫生更精準，但人類透過身體經驗積累的知識是無法取代的。外科醫生的手觸摸過無數生命，那種感官知識對於沒有身體的AI是無法掌握的。

身為人類學家，我思考這些問題的方式，就像你與學生探討他們的AI經驗一樣。我們應該去對話、去記錄人們使用AI的經驗，例如我們正在失去甚麼？該如何保存它？有些東西是我們的雙眼和雙手才懂得的，無論是在精密的外科手術，還是需要社會脈絡的法律領域。我希望學生們能將此視為挑戰，並在這些價值消失之前，去學習並珍視它們。

DC：非常感謝你富有洞察力的分享。在結束之前，你對新一代的研究生還有甚麼建議嗎？

KV：要成為成功的創新研究者的關鍵，在於建立一套「問題導向」的研究設計能力。這意味著不要被單一學科的工具所侷限，要挑戰自己去掌握多種工具，並選擇最適合解決問題的那一個。當然，我們每個人都有自己的專業領域和學者群體，我們可以成為特定領域的專家，並將創新「轉譯」給同行。但最具創造性的做法是在學科內保持嚴謹的同時，對外部世界保持好奇，尋找那些能挑戰學科邊界的工具。這是我在研究科技、勞動與關懷的職業生涯中一直努力實踐的，因為這些研究對象橫跨多個領域，且隨歷史不斷演變，需要我們提出創新的問題與分析方法。

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Academic Dialogue with **Kalindi VORA** and **Shun Chi Donna CHU**

Broadening Technological Imaginations: A Dialogue on Care, Subjectivity, and Desirable AI

KV: Kalindi VORA
DC: Shun Chi Donna CHU

DC: I would like to start our dialogue with a recent project you are working on. "Desirable AI"—I think it is a very attractive topic, as there have been so many ongoing discussions about AI taking away jobs and replacing humans. So, when you first mentioned Desirable AI, it sounds really promising. What is this project about, and what are you trying to find out?

KV: Thank you for the question.

First, I should say that Desirable AI was a project that was designed by colleagues at University of Cambridge together with colleagues at University of Bonn, Germany, and they invited me in as a fellow. So ultimately, it was not my imagination that created the project, but I can tell you why I was interested in it: the notion of Desirable AI points out that the AI we have right now may not be desirable.

It invites the following question from many different perspectives: what, then, would be the technology we would want? I spent the last two summers, specifically 2024 and 2025, working with that group. I do think that group is very optimistic, and for the most part, its project is to invite people working in academic, industry, and policy spaces.

In academia we can generate ideas about what an AI system, an AI infrastructure, or an AI agent might look like if it was serving the desires of particular groups. As for myself, I would not describe myself as an optimist but rather as a skeptic. Accordingly, my role within the Desirable AI has been to raise questions. As another example, when Yasuo Deguchi, a philosopher at Kyoto University,

presented Desirable AI twice, he and his team argued that replacing the "I" of the AI agent with "we" would result in a fundamentally different kind of technology. I think this is a very strong argument.

In fact, when I was at The Chinese University of Hong Kong, I presented a paper that referenced a Buddhist approach to AI design. You may recall that this "Buddhist AI" design advances a similar ethics orientation, in that it imagines an AI as programmed to calculate what is best not just for itself, but also for any being or machine with which it comes into contact.

DC: I do remember it. Can you elaborate more details about the Buddhist AI design?

KV: Yes, I discovered that paper through my research, in which I have found that technology concept papers have been an excellent way to track how histories of exclusion can become sedimented within design imaginations.

I have written about a group of Buddhist philosophers, cognitive scientists, and computer scientists who jointly published a concept paper in 2022 that intended to challenge the dominance of Western ethical frameworks, which are often rendered invisible in technology design. While the paper does not resolve the problem of minority world dominance in generative AI, it does provoke consideration about the pragmatics of what a more responsible machine learning design might entail.

The paper explains that goal-directed activity has been the primary framework through which Western philosophy has understood intelligence. It critiques the Western philosophical commitment to a rigid division between brain, body, and environment, arguing that this divide has constrained understandings of intelligence beyond the brain or mind, and even beyond the human. The authors further suggest that Buddhist philosophy articulates an alignment closely with the new dissolving of the brain-body-environment divide in approaches to intelligence. Specifically, the authors propose designing intelligent agents around a Buddhist-derived definition of "care" as the driving principle. History has shown that with each leap forward in technology, there seemed to be little reimagining of how this exploitation could be left behind during the speculative phase of design.

How we imagine "care" in both data preparation labor and in speculative design in the present will reshape contemporary understandings of care, projecting them into an indefinite future in ways that are unpredictable and likely to solidify as infrastructural.

These imaginations are crucial because they force us to examine the assumptions built into the contemporary machines. But from a skeptical perspective, merely substituting the "I" with the "we" would not address a longer history of unfairness and injustice.

I want to push past the idea that we can have a simple solution, which is that we can just change the AI and all problems will be solved. We can sometimes fix things with technology, and sometimes we cannot. And so, we need to feel some hope now, but maybe skeptical hope for what can be done with AI.

And we also need to remember that AI should not do everything.

DC: I can see from your previous works that you are always, maybe not skeptical, but really critical. You have been trying to bring insights into debunking or unpacking assumptions. Can you share with us more about how you began your career as a critical study scholar?

KV: I began as a PhD student being very interested in the relationship between India, Europe, and the U.S.; to understand the moment, particularly in the late 1990s, I realized that I needed to explore the historical context of India and Europe first, with my primary focus during the 1990s being the outsourcing of labor among these three countries.

And that depended on telecommunications technologies, fiber optics, and internet interfaces. I discovered that the history of the British Empire involved the development of technologies, and that the outsourcing we observe today reflects a similar pattern to that of the British Empire, characterized by the circulation of commodities, labor, and laborers.

But in the time of the British Empire, labor, laborers, and commodities were transported by ships. And my question was how to think about what continues when labor and commodities are circulated by fiber optics as data. On the one hand, it feels the speed of transmission is much faster. But also, I wanted to think about how

much of this idea of data traveling instead of people and goods is an illusion. How much of the data traveling is also carrying some of the same problems that those ships were carrying? And so, that became a way to think about alienation in labor. My first book *Life Support* addressed the emotional labor of service work and how we often overlook the emotional subtext that the industry data carries.

My approach to technology is influenced by my training in critical theories, which forms part of a larger question or critique. This includes everything from Marxist critical theories to feminist theories. Those are fields where we study the same objects as people who are not identifying as critics, but whether that be labor, literature, or the arts, we begin by questioning the methods. For example, *Life Support*, which is about outsourcing, I included analysis of plays and poetry by people who had served in those kinds of jobs, along with interviews with workers.

And the idea was that there is a way that social scientists like me, in the discipline of anthropology, assume that everything we need to know will be apparent through the interviews and through observing. But as a critic, I found that this assumes that the interiority of the experience of a worker does not matter, because it would not be apparent in interviews and observations.

These forms of labor, including emotional and affective, and even as we interact with technologies like AI, call on our subjectivity itself to be involved. So how do we study that? As an anthropologist, it is very difficult. Therefore, I went to these literary sites where people are telling stories from their experience, but they can represent the interiority of the internal experience. So that is a roundabout way of saying that I think part of the benefit of a critical approach is being able to really think about, very broadly, what methods we can use to study our objects.

DC: Yes. Because when I look through your publications and past works, I can feel that you are indeed coming from a very interdisciplinary background. You started with a bachelor's degree in music and religious studies. Now when you introduce yourself, most people will see you as an anthropologist. So how do you see all these labels and how do you define yourself after all these years?

KV: Yes, it is been a lot of work!

I tell my PhD students that to be interdisciplinary scholars, they must be rigorous in their primary discipline and also learn outside of it. And so, my relationship to anthropology has been like that.

I have been a questioning critic of some anthropological methods, but I also must be rigorous in understanding what anthropology aim to achieve, as I believe in becoming fluent in both language and culture before discussing a place. I do believe in talking to people about their experience, and I believe that spending significant time with people in a place that you want to study is important. And these are all values of ethnography and anthropology.

One of the things that anthropology has been very helpful with in thinking about studying AI or technology more generally is that anthropology always assumes that culture is shaping whatever the object is that we are studying. And my other field is science and technology studies, and it has the same commitment: that science and technology happen inside of culture, not apart from it. Instead of viewing AI as a neutral technology that simply exists, we should recognize that it is shaped by cultural influences, and then examine how people interact with it.

I am able to say that technology is not neutral. It came from people with a specific worldview, with particular political commitments. So then, how do we understand technology as situated within culture? Everything in AI has been moving very quickly, but being able to sort of always step back and say, "out of what context are the real people who are creating this dreaming it up?"

To circle back to the Desirable AI question, one of the things that is apparent is we need more diverse imaginations behind the design of the technology. Now we have such a small group controlling the design of AI in Silicon Valley, and I know similarly in China, where there is not broad participation in thinking about who the technology is for.

DC: Indeed, it reminds me of a project I am working on these days. I have been collecting young people's narratives about their use of AI. The research design is simple. I just go into schools and invite students to write me a story about "You and AI."

So far, I have collected about 110 stories, which is very interesting because the students share their experience of using AI to do fortune telling. Students ask AI about their future love lives and the outcomes of their exams. These are uses that we did not initially anticipate. When people first developed AI, they did not expect it to be used for this kind of purpose.

Technology is really an integral part of our everyday life. It is not about being replaced or threatened, but how people are making sense of this kind of subjectivity while using AI.

KV: That is so interesting. I just gave a talk earlier this week about not just how we produce technologies, but how technologies produce subjects and subjectivity. There is an anthropologist named Marilyn Strathern who studied social relations and how they produce people. And my teacher, Donna Haraway, has used Marilyn Strathern's work to basically argue that our relations — the relation between a human and an animal or human, human, or even human machine — it is the relation that produces us. So thinking about that, it has really been helping me with exactly what you are saying, the way that humans are changing as we interact with AI. That we have relations with them, right? It is not that we are just using them as tools.

DC: Yes. And I think it is going to be a huge area for further research because this is so embedded in our lives. In January 2025, you joined us in our 60th anniversary international conference. Your presentation about data work and care work also reflects your long-term concern about technology.

KV: Yes, there is a direct connection between the work I have done on labor and the history of information technology and the presentation I gave in January 2025. For example, content moderation has been one of the forms of invisible human labor that supports the automation of content generation. These workers act as a filter between algorithmic management and what actually reaches users. This work, also known as "data cleaning" work, animates the map of the U.S. labor outsourcing to formerly colonized labor markets, which is something I researched for my first book, *Life Support*.

In my presentation, I discussed how on May 22, 2024, a group of 97 tech workers based in Kenya, including data labelers, content

moderators and AI workers, wrote an open letter to President Biden. Their urgent purpose was to lobby for protection of their labor rights and to disclose abuses happening at the hands of U.S. companies, including Facebook, and OpenAI. As the self-organizing by Kenyan micro workers demonstrates, the basis for many large-scale tech industry prototypes continues to be the model of simple scaling labor exploitation.

A second concern I presented is that the training data for large language model (LLM) is static, whereas the world itself is not. Retraining a model is very expensive, so they cannot keep up. Also, the data is limited. It does not represent the whole world but rather a limited portion of the world as represented on the internet. We should be concerned about the people whose lives, experiences, and histories are not represented in training data. It effectively furthers erases those who are already marginalized. The adoption of LLM has been so rapid that they have become infrastructural without review and ethical oversight. These changes will have long-term impacts we are only now starting to consider.

Similarly, how we imagine "care" in both data preparation labor and in speculative design in the present, as in the Buddhist AI example, will shift contemporary notions of care into an indefinite future in ways that we may not predict and that are likely to become infrastructure.

DC: After a year, this is still a highly relevant and valid argument. How do you think about that conference?

KV: I really enjoyed the conference. I always adopt the mindset of an anthropologist when attending conferences.

In my perspective, seeing this community was very interesting. For example, all of us have the conferences we attend, and so I noticed everyone here goes to the Internet Studies Association and has investments in topics that I research as well, but from a different perspective, being in science and technology studies, which is more interdisciplinary, though it does include media studies.

But I really, really enjoyed it, and I took so many notes that I am still thinking about them today. However, regarding the question of epistemology, I have reached a similar conclusion: what we are

currently witnessing around AI is a contest of different epistemologies. And who gets to say what is true and how do we know who we are?

Which is why I have been thinking about this question of the relation. I have a co-authored book called *Surrogate Humanity* in 2019. And one of the things I still think about from that book is; by designing a technology in a certain way, we are also designing the relations that are possible.

As we interact with a machine, it is also training us to interact with each other and the environment and non-humans. And I think a lot of people are seeing that. To think about AI is also to think about the planet and society. So, this question of epistemology, not just how we know it is true or what is factual, but also who we are, is important from a critical standpoint. The training in feminist studies and feminist theory is also training in thinking about power and hierarchy, for me, it is both at the same time. As I am hopeful, I worried about how power and hierarchy will get built, baked into these relations that are being designed for us.

With AI, I also see it as a moment of potential to change power dynamics and hierarchies because the technology is still new. And the science technology and society (STS) scholar Langdon Winner says in the early stages of a new technology, there is flexibility. There is this moment of potential.

When I am optimistic, that is how I see this moment, as one where it is still possible to intervene in the sense of how we can make this more fair. However, I have agreed with others talking about how we force the technology industries to question the idea that all technology progress is good.

How do we learn to say, "okay, this is enough. We have enough AI. Let's just slow down and think before building more." I do not know if you are having that same conversation in China.

DC: I think there are many ongoing debates and discussions. Yet it often seems to me that the more critical and the cultural aspects are not really entering the conversations. Do you have this feeling?

KV: Yes, I do. I think understandably right now in the U.S. our students are very concerned about employment and more concerned than before.

And we are noticing that students are changing, for example, more students are going for majors that have a clear employment outcome and fewer students are taking critical classes, like the humanities. We are seeing students who really do not want to have to make AI such an important and integral part of their schoolwork.

I am not sure, if I interview my students, many of them want to stay away from AI. They see that if they use it, they are not learning, and not retaining information. But also, there is this pressure to keep up because AI is widely used and sneaking it by their professors, then those students will do better because they have more time to study for the exams where AI would not help them. So the professors are in a race to figure out how to create assignments that are AI proof. We are in this sort of terrible acceleration. But I do not think anyone wants to be in it.

Last night I had dinner with a computer science professor, colleague, and he was saying the students who come in their first year to programming classes know less than they did in years past. Even though they have had access to AI assisted programming, he sees it already as undermining computer science itself.

DC: So anthropology seems to be a very unique perspective in this debate. Can you say more about how we can practice anthropological ways without being an anthropologist, for example?

KV: Yes. That is a good question. Anthropology of technology is approached in several different ways, so I can speak about my way. Many people would say, you understand technology by spending time in the places where it is made or in the places where it is used. In the U.S. that would be in a corporation, Silicon Valley, and in the spaces where it is engaged such as in homes, schools, etc.

And my approach has been somewhat different. I am focused on the spaces where the design of technology is first imagined. And before anything is built or mass produced, who are the people that are dreaming of what is the next important technology? And then the anthropological approach is to see how that relates to a moment in society and culture.

For example, I did anthropological research on the practice of gestational surrogacy in India, which I thought about through the

technology of assisted reproduction. So in vitro fertilization, embryo transfer, these are the technologies. And at the same time, I was doing research and found out that there were two labs, one in Japan and the U.S., they were trying to build an artificial uterus. And to me, those imaginations were connected, because when newspapers would write about gestational surrogacy, they would call it "wombs for rent." And at the same time engineers were trying to build artificial wombs. So there was already in the culture idea that you can have a uterus without a woman, without a mother. And I saw the continuity between the engineering imagination and the market for women to act as gestational surrogates as both invested in the idea that the woman as a full person can be separated from the reproductive function, not important. We can isolate this organ, the uterus, and make it produce, right?

This is a capitalist idea, someone is not using their uterus, and make it productive. For example, by renting it out for gestational surrogacy. To me, that was an anthropological project because there is a cultural imaginary behind the lab that says, an artificial uterus is important. We should ask, why is that the question that is important to them, particularly given unsustainable growth of the world's population?

And what happened in the 1990s is that it was not an effective technology. They tried to sustain mouse embryos, but only managed to get them to live for a few weeks. That technology is more successful now; but again, my interest was in the imagination and I continue to seek out concept papers in various technology sectors quite often to think about that.

As a humanist, as someone who also thinks about cultural works in addition to human social activities, finding evidence of that continuity of imagination is very helpful. So we can think about things like science fiction alongside a speculative technology paper or even a speculative technology practice. One thing we did in the book, *Surrogate Humanity*, which was about AI and robotics, is interviewing a roboticist from Massachusetts institute of Technology (MIT) who became an artist so that she could build objects that critiqued the problems with mainstream robotics. Her PhD project was a critique of care robotics, this field of building robots that will especially help elders when they lose their faculties and need support.

These robot prototypes, such as Pearl the NurseBot, which is a collaboration between Carnegie Mellon and University of Pittsburgh in the 2010s, it was not only designed to help in hospitals, but also in retirement homes and ideally to allow elderly people to stay independently in their own homes by themselves longer. And the nurse bot would give out medications and through a little screen, it had a cute face and would ask questions like, "how are you feeling? Do you feel pain?" Those questions will be asked by a nurse in the U.S. And therefore Kelly Dobson, the artist worries, these robots are imagined replacing nurses, but also adult children, grandchildren, pets, they are imagined doing all social relations for humans. Yet the robot actual function is very basic.

And so what does that do to our social notion of care? It only makes it poorer. It brings it down to this very functional relation. The machines that Dobson builds are not speculative technologies, but rather are presented as works of art. She built a robot called Omo, and it is meant to present a richer version of care as a way to critique mainstream care robotics projects.

Omo is an orb shaped machine that you hold almost like a baby or pet, and and it has got a breathing motion. Humans, all mammals, our nervous systems will entrain with a breathing pattern of someone else. For example, if you are with someone and they slow their breath down, unconsciously, you will slow your breath down. So Dobson builds this object that you hold and its breathes can calm you down, but it also can breathe faster and make you more energetic. Whereas Pearl, the nurse bot is a kind of companion robot imagined as a servant and they are programmed to obey to be an employee, and to have its own quirks, so it has noise in the programming, and sometimes it would not do what it is supposed to, and this is important because we are brought into subjectivity through the relation to the machine, even though we do not think about it that way.

If we are always treating our machines as servants and employees, it affects us in an important way. As an anthropologist, I am very interested in the relations, the social relations we have with each other and machines, but also in the cultural assumptions behind how technologies are imagined. And, one of the exciting ways assumptions

is to find someone like Dobson who is actually doing something else, like a counter example to mainstream projects and the imagination behind them.

I think that is why humanistic interdisciplinarity is important, because rather than simply working with the tools that we have, we learn this creative approach, which is maybe we do not have the tools yet. And I think that actually allows for innovation, it allows for creative problem solving, all kinds of skills that our students can then provide in their jobs.

And it is said in interdisciplinary departments: we produce people who have a suite of options for how to problem solve, and they are trained in problem solving. So that is the benefit of interdisciplinarity and what I love about it. There is never only one right answer, and the student should be trained to think about how to justify your choice of methods as they absolutely must be used.

DC: I hope many more people can see the value of the humanities and social science subjects. And in fact, I think they are becoming more important than ever because they are giving interesting perspectives. My question is what is the fun to have all the work done by AI? Even this is difficult, it will give you some other sentiments and feelings when you are doing it yourself.

KV: The last thing I will say as an anthropologist is our imagination of work often simplifies what things.

For example, in surgery there are all these potential applications of AI to outperform a surgeon, but there are things that people know through their physical experience. The hand of the surgeon knows things from having done surgery on so many bodies that an AI cannot know.

So I am thinking a lot about this as an anthropologist in the same way you are speaking to students about their experiences with AI. We should be speaking to people about their AI experiences, like what are they? What is being lost? How will we preserve it? Because there are so many things that human knows, especially in these very delicate professions like surgery, but even in social context and law. And I hope our students will take up as a challenge, how to learn about these things before they are gone and value them before we lose them.

DC: Thank you very much for your insightful sharing. Before we close, would you have any further advice for the new generation of research students?

KV: The key to being a successful and innovative researcher is to build a set of skills that allow for a problem-based approach to research design. Rather than imposing only the research tools of one's discipline, one challenges oneself to master various tools and then chooses those that are most appropriate to solving the problem. Each of us has a research specialty that comes with a community of scholars. We can become experts in a specific field and "translate" innovation for that community. However, a creative approach requires being rigorous within one's discipline while also remaining curious and rigorous in seeking tools that challenge its presumed boundaries. I have tried to do this in thinking about technology, labor, and care throughout my career, as these are objects of study that can engage many fields and that also change over time, requiring new and innovative questions and tools of analysis.

披露聲明

本文研究者未報告潛在的利益衝突。

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