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### 3B Copyright Law & Competition Law Session. Artificial Intelligence

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**Authors**

Annsley Merelle Ward, Stephen Burley, Colin Birss, Sasha Rosenthal-Larrea, Suzanne Wilson, John Lee, and Helen Conlan

Session 3B

**Emily C. & John E. Hansen Intellectual Property Institute**

**TWENTY-NINTH ANNUAL CONFERENCE  
INTERNATIONAL INTELLECTUAL PROPERTY  
LAW & POLICY**

*Thursday, April 21, 2022 – 12:30 pm*

**SESSION 3: COPYRIGHT LAW & COMPETITION LAW  
3B. Artificial Intelligence**

***Moderator:***

**Annsley Merelle Ward**

*Wilmer Cutler Pickering Hale and Dorr LLP, London*

***Speakers:***

**Stephen Burley**

*Federal court of Australia, Sydney  
Commissioner of Patents v. Thaler*

**Colin Birss**

*UK Court of Appeal, London  
AI Inventors – What Is All the Fuss About?*

**Sasha Rosenthal-Larrea**

*Cravath, Swaine & Moore LLP, New York  
Patenting Inventions Related to Artificial Intelligence*

**Suzanne Wilson**

*U.S. Copyright Office, Washington, D.C.  
Artificial Intelligence, U.S. Copyright, and Human Authorship*

***Panelists:***

**John Lee**

*Gilbert + Tobin, Sydney*

**Helen Conlan**

*Mishcon de Reya LLP, London*

\* \* \*

## Session 3B

**ANNSLEY MERELLE WARD:** Welcome to session 3B on artificial intelligence. My name is Annsley Merelle Ward. I'm counsel at WilmerHale, and I write for *IPKat*. I'm based in London right now, but my heart is really in New York right now. I wish we were all there together. Thank you so much to Fordham and the organizers behind the scene for making this happen remotely. I know it's a lot of work and we really appreciate it. I'm going to be your moderator today for this glowing panel of human intelligence, where we're going to learn, debate, and have fun addressing questions that are being debated in boardrooms and courtrooms across the world.

Questions like what is this fuss about the fight for AI to be an inventor? Is it mere publicity or something more? Does AI call to question the philosophical underpinnings of IP's incentivization and reward scheme? Ultimately, what should we do about it, if anything? Over the past week, we've gotten a decision from Australia's Federal Court holding that AI systems cannot be inventors. We also, just a couple days ago, got the reasoning from the German Federal Patent Court who set aside a decision of the Patent Office and refused the naming of an AI in inventor designation, but still said no dice as DABUS being inventor.

Again, both of these decisions as with the decisions from the UK courts involving the now infamous DABUS, a name that can elicit groans or squeals of excitement for critics of AI in the IP space. We've seen legislative consultations across the world, and it's a hot topic. I don't think any law firm hasn't written a post about AI. I don't think there's been an [chuckles] IP conference over the last couple of years that doesn't have sessions devoted to AI. It just seems to be one of these topics that people have an opinion on. Either people say, "This is really important, we need to do something about it," or there's some folks that say, "This is just a storm in a teacup, and we don't really get what the hype is about."

To unpack all of that, we're going to jump across over to Australia where it's, I think, three o'clock in the morning. We're going to [chuckles] get you out of the way first, Stephen Burley, who is a judge of the Federal Court in Australia. What fortuitous timing to get that decision in the past week. We really appreciate it. [chuckles] I'm sure you timed this as such. We'll also get John Lee who's also in Sydney right now commenting on this as well because we do appreciate it is very early or late at night in the morning for you. Over to, what is going on in Australia?

**STEPHEN BURLEY:** That's a really good question. I'd like to join your comment in saying how nice it is to be here more or less. I'm very much going to join the queue of people who wish they were in New York right now, and hope to see you all there next year. Could I begin also by acknowledging the Gadigal people of the Eora nation, the traditional custodians of the land on which I give this presentation and pay my respects to their elders both past and present. In Australia, the decision was delivered last week by a full court of which I was a part and decided that an inventor must, for the purposes of the Patent Act, be human. That ruled out DABUS.

For those not acquainted with the case that's been going off a bit like a firecracker around the world, in a nutshell, it involved the application for a patent that was filed by Dr. Thaler. He nominated that the inventor of the invention,

which was disappointingly entitled Food Container and Devices for Methods Attracting Enhanced Intention, it could have done a bit better than that, I think, was an artificial intelligence called DABUS. The Commissioner of Patents and Thaler agreed that for the purposes of the case, the output from DABUS was an alleged invention for the purposes of the patent application.

They also agreed that Dr. Thaler was not the inventor, although he owns the copyright in the DABUS source code on the computer on which it operated and is responsible for its maintenance and running costs. This set up a debate as to whether under the Australian patents legislation an artificial intelligence could be an inventor, and whether Dr. Thaler could claim title to the patent application, and thereafter, any granted patent through it. As I have said, DABUS lost.

The nuts and the bolts of the case involved an exercise of statutory construction, but it's instructive, I think, to have a look at the reward structure that underpins patent legislation in general and how it came to be that it is human inventorship that lies at the root of title to subsequent ownership of a patent application and a patent. One only has to go back about 400 years to see how the modern conception of an inventor arose. The Statute of Monopolies lifted the prohibition on monopolies for only the true and first inventor of a new manner of manufacture.

The others of course, that such an inventor had brought benefit to the kingdom by delivering to it something that was new and from which it could benefit by the medium of enhanced trade. The deal was that in return for creating an invention, the inventor had to disclose it to the world in a document that later became known as the *Patent Application Specification*. For centuries, the patent specification has been seen as a monologue or perhaps a narrative provided by the inventor to the state or Crown supplying information about the invention.

It was the inventor showing off and explaining the invention in return for the monopoly. Nowadays, of course, it is the inventor explaining the invention through the medium of a patent attorney's drafting skills. The concept remains of the specifications, the statement by the inventor of the invention, how it works, what it does, and so on. A grave penalty was visited on the inventor if it transpired that the patent specification expressed a falsehood. The patent would be annulled by route, or revoked in modern language, for false suggestion or misrepresentation regardless of whether the owner of the patent was the inventor or a successor entitled to the inventor.

It was the representation of the inventor in the specification of the patent that could not be materially false. So it was that there was an inextricable connection between the work of the mind of the inventor and the monopoly granted. The reward to the human who invented was the grant of the patent. She was encouraged to innovate so that yet more innovation would follow. There's something of a dissonance between this reward structure and the identification of a machine as the inventor. The machine does not invent for reward. It does not engage in entrepreneurial activity. It does not invest in the profits from inventorship into further innovative development for the general betterment of society.

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That whilst it might be argued that corporations own patents now and that they do these things, that tends to disguise at least two facts. One, that nevertheless, it is still their human employees who invent, and two, that there is still many inventions created by individuals in their garage or small businesses. More importantly, the development of a reward-based system for inventors in the form of the grant of patents has for about 400 years been acutely focused on something that humans identify with. Whether you call it greed, ambition, or as Elon Musk might have it, the good of humanity, the idea is that inventors will strive to greater heights in return for a monopoly whether for themselves or their employers.

Artificial looks to turn that on its head as it does so many other things. Before I should get carried away, I should say that not much of this was mentioned in the Thaler judgment, that was a pretty prosaic discussion of statutory construction. It was simply decided that as a matter of the way, the Australian act was worded, it was not capable of being an inventor. The concept of this series of cases throws are fascinating. As we point out in the judgment, they are matters of public policy that are best left to legislators who have had the benefit of hearing debate on the subject than judges implementing policy-based decisions based on how they think things should go.

Such a debate is, I think we all agree, necessary and worthwhile, and this conference is an ideal structure in which to consider it. In the time remaining, I'll mention just a couple of points as teasers for those that follow and that might enhance the debate that then follows. If an artificial intelligence can be conceived of as an inventor, how else one could sort out disputes in relation to entitlement where some human actors consider that they contributed to the invention? Generally, this comes to the black box theory of artificial intelligence. Without being able to explain the reasoning that led to the invention, this and any entitlement dispute becomes difficult to disentangle what's to apply for it.

Another point that arises, and perhaps it's anterior to that, is, is there a problem at all if DABUS cannot be an inventor? that was one point that wasn't considered in our case because of the agreed facts. Dr. Thaler as the person who developed the artificial intelligence, provided its programming, and crafted its inputs, may properly be considered to be the inventor rather than the machine itself, not tested. It's possible that the person who did these things is a co-inventor which would lead us back to the entitlement difficulties that I just mentioned.

Another question is should thought be given to recalibrating substantive validity tests such as inventive step if an artificial intelligence is to be B or A paradigm for inventorship? I'm inclined to think that the patents regime could accommodate this shift without much change because, as a matter of theory, an artificial intelligence is probably just a really brainy inventor, or a quick one anyway. Perhaps the toolbox for the ordinary person of the skill and the art in fields where the artificial intelligence is used would include the augmented skills supplied by artificial intelligence.

Perhaps that would lead to many patterns being invalid because one way or another, little would escape the test for obviousness if the right form of artificial intelligence is used. That may well strengthen the pattern system, but it

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might mean that the sheer brute force of artificial intelligence machines churning out patents and prior art is such that incentives to innovate are destroyed because, in the world of artificial intelligence, everything is obvious. There are ramifications that go well beyond a particular case for the inclusion of artificial intelligence in the scheme of patents. I think we should tread carefully about having radical change.

It was, I think, very worthwhile that Dr. Thaler is knocking at the door so hard because it seems to have prompted a debate certainly amongst the judiciary because we were compelled to think of it, and around the world which has been brewing for a long time about what should happen. Like the introduction of social media to the world, which took off in the last decade or two, there are ramifications that we just can't predict. They go right down to the reward structure that's been developed for patent systems, and they continue to go for a very long way. I think it's an important debate and one that I'm very happy to participate in.

**ANNSLEY MERELLE WARD:** Thank you so much for that. You touched on a lot of points that we're going to be discussing in this panel session, which is great. One of the big points that keeps coming up is why does this matter? Why did Dr. Thaler do this? Was it to start this discussion? Was it publicity? Why does it matter for the AI to be named as an inventor? You mentioned it wasn't discussed in the judgment because it was part of a degree set of facts. Why?

**STEPHEN BURLEY:** Yes. That's one of the many things judges don't get to learn about. We can't ask those interesting questions about why the hell are you doing this? [laughs] I suspect from the little bits I've read around that it's part of a thought experiment that is being projected into the world because there's some important work going on in artificial intelligence. Those people behind Dr. Thaler and Dr. Thaler himself see it as a significant aspect. One can't rule out publicity, but others will know more than I do about that.

**ANNSLEY MERELLE WARD:** This was an instance of the enlarged panel, so there's five judges sitting in this decision. How often does that happen, or who takes that decision that this is a matter of policy that we need more people?

**STEPHEN BURLEY:** That's a matter for the chief justice. I can't speak for the precise process by which it happens. I think it's slightly policy-based just to ensure that there's a clear voice if there is a clear voice or alternative voices are expressed as it happened. It was a clear unanimous voice for the five of us.

**ANNSLEY MERELLE WARD:** John, also, we can see behind you that [chuckles] there are tabs of darkness in Sydney right now. What's been the ramifications of this decision so far? What are you hearing on the ground?

**JOHN LEE:** Thank you. Firstly, hopefully, you can hear me. I'm pleased to see Justice Burley sitting at 3:00 AM, which I'll take into account next time I have a client seeking urgent relief. Look, significant ramifications, as Justice Burley said, we had five judges sit on the full court bench, which is unusual. They issued a unanimous decision within about a month. It was fairly comprehensive and I think, as Justice Burley said, it's very clear, I think, that AI cannot be an inventor under the Australian legislation. I think it would require reasonably extensive

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surgery to our act and many others, no doubt, around the world to enable that to happen.

I think that will be a difficult road. I question the will and enthusiasm of many people trying to take a pretty radical revision of the Patents Act in Australia for this purpose. One of the reasons I think is-- I looked up some of those lists of the most significant innovations of the last 50 years or 100 years, and the PC and things, personal computers, AI, we think that they're very radical, but you've got to think about some of the things that have been developed over the last 100 years that have had equally significant, I think, impact, such as electricity.

Each time one of these things come along, we think, "How does this fit within the existing regime, and do we need to revise it?" I think we need to be careful about throwing the baby out with the bathwater here and do we need to undertake a pretty radical change to a system that I think otherwise works well? That's something that we're now going to be grappling with in Australia.

**ANNSLEY MERELLE WARD:** Thanks, John. We're going to hop over to the UK right now. You mentioned, Steve, in the Statute of Monopolies, and we do have a common legal tradition. We also have had the pleasure of these decisions involving DABUS in our courts. I'm going to hand it over to Colin Birss, otherwise AKA Lord Justice Birss, Court of Appeal, and doing amazing things for civil justice at the moment in the UK. Colin, can I hand it over to you?

**COLIN BIRSS:** Sure. Thanks, Annsley. I should say that my computer thinks I have an unstable internet connection, so I'm sorry about that if I freeze too much. It's probably an AI deliberately sitting there causing trouble. Of course, it's a real pleasure to be here. It would be still even better if I didn't have an unstable connection because I was in New York, but there it is. I'm going to tell you about the position in the UK, particularly focusing on patents and copyright, and an endeavor to try and explain why I think this does matter. Just starting with patent law, of course, the position is we decided in the Court of Appeal the UK version of this DABUS case, and it comes down to three things.

First of all, only persons can own property. They can be humans or companies, legal fictions like companies, but machines are not that. Second, inventors are human beings. It's the same as in Australia, perhaps no surprise given the common origin, but it does mean that an invention devised by a machine has no inventor as that term is used in patent law. The third point, which is of real importance in the UK, is that our UK patent procedure is such that an application for a patent which is made by a person who is someone who could own a patent, but it's for an invention made by a machine cannot be granted and has to be deemed to have been withdrawn during the application process.

That's the outcome of the DABUS case in the UK. It does have the result that inventions made by AI can't be patented in the UK, but that's only because of this third step. I should say, because I don't know, I was the dissent on the third step. I said I didn't think that that was what the law would be, but it is what the law is in the United Kingdom because that's how our system works, and that's fine. This procedural rule, at least from my perspective, is one that's designed to make sure the public knows who the inventor is and knows how the patent applicant says they got the right to apply for the patent.

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I will take this opportunity since I'm not sitting in court to say that as far as I'm concerned, what's happened is a rule with those purposes has been turned into a basis for refusing patent applications, which I personally think is not the right answer, but it is the answer that is in our law, and that's the way it goes. I should say, just to be absolutely clear, I'm not for the moment suggesting that that's crazy. I totally understand why my colleagues came to the conclusion they did, I just don't agree.

Whatever the rights and wrongs of this procedural issue, though, which is pretty nerdy and rather narrow, I do think it's a fair comment to say that it's an odd way of deciding a rather important policy question, which is what this is actually really about. I should say again, just for the sake of being absolutely clear, that's not a criticism of my colleagues either. That's just the way the case has come up. It ends up being decided in this way, and that's the way it goes. Contrast that with copyright law, since 1988 in the UK, computer-generated copyright works attract copyright.

The copyright is owned by a person, and the way our law does that is by defining the author of a computer-generated work as the person who makes the arrangements necessary for the creation of the work, so effectively the person who runs the computer, putting it in brief terms. It's notable that the world didn't come to an end when the UK passed that law in intellectual property in copyright law in 1988. Some of the suggestions allowing rights to be granted in intellectual property generated by computers which are supervised by people when they do it, you might think that perhaps that's an indication that it's not as radical as it might seem.

There's a very useful contrast to draw in this because there was a decision of in fact Mr. Justice David Kitchen, now Lord Kitchen in our Supreme Court, in 2016 on this topic called *Nova and Mazooma*. It was about a computer game about the game of pool. The real point was that the copyright in that case was in composite image frames, effectively a cartoon, which had been created by a computer set up by a person. If the law had not said that computer-generated works could be copyright and would be owned by the author in that context, there would've been a rather difficult question about whether there was any copyright at all in that case.

Because the law allowed for that kind of copyright to exist, there wasn't a problem and the case could proceed on the basis that those things were copyright, which I must say I might rather think is the right answer. It solved a real problem, this law. The same problem has arisen in patents. There's a case called *AP Racing and Alcon*, which is a case I decided in 2013. It was a patent case.

The inventions which took machines in a car was created by a computer set up by people, but nobody took the point that, in fact, the applicant should have been deemed to have been withdrawn during the application process, and therefore, should never have been granted even though it's pretty obvious that the real inventor of those, the divisor of the actual design of the brake caliper in that case was a computer, and all that people did was set it all up to run. That's why this matters.

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It matters at least because what we have created out of thin air, at least in the United Kingdom, is a new objection to certain patents, which will justify, and people will do this, they will come to go and say, "I want discovery of the process by which this application, this patent was invented in order to prove that it was actually invented by the computer and that you have committed a fraud on the patent office because you didn't tell us that and it actually should have been deemed withdrawn for something that was done 20 years before."

I must say I am concerned about that because I think it's unfortunate. That doesn't mean, by the way, that that means I'm writing in DABUS. That's not what I'm talking about. I just think this is an illustration of why this is an important issue even on its own terms, never mind all the fascinating questions about what AI is going to do to the law or, for that matter, to modern life. That's my time, I think, for my submission so I'll stop.

**ANNSLEY MERELLE WARD:** Yes, your submissions, Colin. Thank you. That really raises a really interesting point. This was solved in copyright ages ago, so why can't we just create the same statutory regime in patent law? Why the very lengthy consultations that we're waiting of? Why all this drama about it? Isn't it just an easy legislative fix?

**COLIN BIRSS:** Of course, in terms of UK law, in terms of legislation, it's a very easy thing to. You could write into the law if you didn't think it was there already. Of course, one of the questions that the DABAS case throws up around the world is what exactly is the law without any legislative amendments? Honest men can differ about what they think the law should be, honest people can differ about what [laughs] they think the law should be. I don't see why not.

I'm not naive. I do understand that there are all kinds of potential implications for allowing-- To me, I think what I'm trying to say is to pretend that we are not already in a world in which inventions which we are already granting rights to have in fact been created by computers is, I think, naive. I think it's a mistake. I think it's already happening. This has been happening actually for years and so this is why this distinction bothers me more than anything else.

**ANNSLEY MERELLE WARD:** I absolutely agree with that. It almost seems like people are getting a little bit caught up with the more wishy-washy, the need to recognize because of fairness. This is an argument that has been running, the fairness of acknowledging the AI as an inventor. I think that, as soon as you say that, people are just like, "That's ridiculous. Give me a break." What we're talking about is really making sure that and not allowing a procedural mechanism or having procedural rules where you have this team withdrawn type of issue that we have in the UK. You're not therefore then distinguishing the invention and the rights in the actual invention that we're talking about. That's where this debate is.

**COLIN BIRSS:** Exactly. The really interesting legal issue, which has obviously come up in Australia as well, is this idea of humans being the inventor, there seems to be pretty well unanimity now, at least in the UK law-based countries. Sorry for describing Australia that way. It's not a really good way of doing it, but origin-based, let's put it that way. It is because of title. The rule was written that way, really, because of title. It wasn't really written that way because anyone was thinking that it was even possible for anybody other than a person to

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invent an invention. That's clearly the way the law was set up. It's, if I may say so, obviously the right answer, that inventors have to be people.

That's only because that's the way the law was set up. What it doesn't follow, seems to me, is that the fact that inventors have to be people means that legal persons, whether they're companies or humans, can't own an invention, which was in fact created. To my mind, whether an invention is patentable or not should be something which depends on the objective qualities of the invention itself and its relationship with the prior art and all of that, rather than some potentially nightmarish game arguing about how it actually was derived and who did what and which button was pressed on what computer.

**ANNSLEY MERELLE WARD:** I agree. Stephen, you unmuted yourself. Did you want to add something to that?

**STEPHEN BURLEY:** I think Colin has raised a lot of really interesting issues there. Probably one of the themes of my reflections on this going forward is the need for hastening slowly. I'm not sure if I agree with John's earlier comment that we need to effect root and branch change to the patent system if we're acknowledging that artificial intelligence can be patents. I think there are two things to observe. One is there's a question about patenting artificial intelligence which is not really what I'm talking about or I've talked about and I don't think Colin's talked about. The second thing is artificial intelligence as the inventor.

I think the second one raises a lot of interesting questions about ramifications. As Colin said, this has been going on for some time. It seems verbally behind the background, but having acknowledged that it is there, the ramifications, I think, are potentially profound. They really touched upon those matters that I've mentioned about the likelihood of their need to adjust tests or whether it can be absorbed within the patent structure as we've got at the moment.

**ANNSLEY MERELLE WARD:** Thanks, Stephen. I'm going to turn to another UK [laughs] originated country, yes, I know, in terms of common law. Again, I'm going to turn up to Sasha Rosenthal-Larrea who's a partner at Cravath in New York who's going to give her view from the stateside experience.

**SASHA ROSENTHAL-LARREA:** Thanks, Annsley. Before I get started, I think it's helpful to set out when we talk about Artificial Intelligence inventions, we're actually talking about two different classes of inventions. The first, which have been covered by Colin and by Stephen, are inventions that were invented by AI. The second and which I think deserves some attention is inventions that are comprised of or include artificial intelligence technology, which are also very valuable [chuckles] and do need to be protected.

What I'm going to cover really is a lot of the challenges to patent protection for artificial intelligence technology as inventions in the United States, what other types of protections are available. Then related to that, because data sets, just data generally, is a huge driver of value with respect to artificial intelligence innovations, I'm also going to delve in a little bit into what protections are available for data sets, whether they're proprietary or whether they're publicly available in some form and apologies, I had some slides, but I am also [chuckles] having some technical difficulties.

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Starting out, in the US, there are judicial exceptions to the types of inventions that can be patented. I'm going to talk a little bit about ALICE and the effect that it's had on artificial intelligence inventions. The US courts have determined that in particular, abstract laws, laws of nature, and mathematical formulas are not eligible for patent protection. The fundamental policy behind this is that courts and patent agencies have to avoid granting a patent monopoly on the building blocks of human ingenuity because, otherwise, further innovation based on those is going to be curtailed at least for the patent term.

However, because artificial intelligence is essentially about training machines to perform mathematical equations and organize human activity, and really at the end of the day, to mimic and surpass the human brain, it's made it really difficult for artificial intelligence innovations to survive ALICE to have eligibility. Another difficulty is that the ALICE-MAYO tests do allow patents to be issued, or make it more likely that patents are going to be issued for claims where the elements amount to significantly more than an abstract idea. The focus of the courts here, though, has been whether the technology produces an improvement on an existing process.

The unfortunate upshot here has been that while incremental improvements to something provided by AI may be patentable, truly novel and perhaps game-changing artificial intelligence inventions won't be because there's no existing technology in the field to improve upon. You can see how this is a problem because we want to incentivize the development of game-changing technology that really changes how we interact with the world. The current regime in terms of eligibility in the US really casts a lot of doubt on the ability to do so.

The practical result of ALICE has been a real dramatic effect on artificial intelligence patents. Just practically speaking, a really significant portion of AI patent applications are at risk of challenge on subject matter eligibility grounds and in fact, almost half of those that are at risk have already been rejected on those grounds. Another thing to talk about when it comes to patenting or possible patent protection for artificial intelligence innovations, or when it comes to enablement and proper disclosure, which are both requirements for a valid patent in the US.

Enablement means that the specification of the patent must enable a person having ordinary skill in the art, which we've covered already, to make and use the invention. I'm going to get back to the standard in a minute. There also has to be an adequate written description which is sufficient to demonstrate that the inventor actually possessed the invention at the time of filing. How does this create problems with respect to patenting artificial intelligence inventions? An artificial intelligence invention absent as data set doesn't really yield reproducible results, meaning that a person having ordinary skill in the art can't really make and use the invention based on a written description.

It could also call into question whether the patent was enabled or even if the written description requirement was satisfied. The problem, though, is that publicly disclosing your otherwise non-public training data set is problematic because as I'm going to cover later, there is a lack of IP protection in the US for

data sets that are not kept as trade secrets. Obviously, to the extent you disclose your data set to obtain patent protection, you lose the proprietary nature of your data set. Another problem comes really with just the nature of the technology and how far it's developed.

Black box AI where even the designers of the algorithm can't really understand why the AI arrived at a specific decision, in these instances, it's almost impossible to produce a written description that's properly enabling. Explainable AI seeks to use rules that are easily understood by humans, but really at the end of the day when we're talking about cutting edge AI, the critical power of AI is really such that at the end of the day, you're going to have a lot of black box AI that isn't going to be patentable. Another thing I was going to cover was just the impact of the person having ordinary skill in the art.

I think this was covered already, but it's important to note that to the extent a person having ordinary skill is deemed to have artificial intelligence tools at their disposal, which is something that's under consideration, another requirement for patentability also comes into question. Any claim has to be non-obvious. So, the problem with this, of course, as has been mentioned before, is that if you're using AI because AI is able to process numerous combinations of parameters, there comes a time when tasking AI with solving a problem comes with an expectation that it's going to find a successful solution.

At that point, many inventions become unpatentable if you can assert that you could throw AI on the case, and it would arrive at the same conclusion. I think the last point I want to make is with respect to novelty, another requirement. Artificial intelligence algorithms are actually not themselves novel. Really, many of the novel applications of AI largely stem from increases in the amount of data available and the computing power available to process the data. However, the algorithms themselves have been around in some form for many years and are somewhat stable.

You have the difficulty of crafting claims reciting unpatentable data sets interacting with anticipated algorithms, and so you run into a lot of problems at the end of the day. Given the issues with patenting AI, trade secrets end up being a really attractive alternative for getting IP protection for algorithms. I understand my time is up, but I'm just going to put out there a really interesting issue that has arisen as the world becomes more and more aware of the problematic nature of potential bias in artificial intelligence.

There have been increased calls because of this for algorithmic transparency. There's concern that algorithms while operating under the veneer of objectivity are actually biased, and this usually results from the use of training data sets that end up having been biased. One way to combat this is to have algorithmic transparency, but of course, opening up the algorithms and training data sets exposes them, and because often trade secret protection is the only thing that's available, there's a really big tension there as well.

**ANNSLEY MERELLE WARD:** Thank you so much, Sasha. So many issues to unpack there. I think identifying there's the tension of we have a patenting ability problem in the US with AI, but on the other hand, then we can't protect it with trade secrets necessarily because we need to be disclosing things

and identifying the bias in the datas, et cetera. What would you do if you had the power to do something about the ALICE problem? What is the fix there? What is the proposal?

**SASHA ROSENTHAL-LARREA:** ALICE has been causing a lot of problems to the point where recently, a physical camera was deemed abstract and therefore unpatentable. I think that there needs to be basically a legislative solution undoing ALICE because really it is a creation of the courts. It really is going to have to be a legislative solution, I think.

**ANNSLEY MERELLE WARD:** Do you think there is appetite to do that? Do you think AI can propel that to happen quicker or do you think it's just going to get lost in Congress?

**SASHA ROSENTHAL-LARREA:** I think there's a huge appetite for that. Commenters have been clamoring for Section 101 reform generally. And I agree with you, I think that because AI is an exponentially increasing technology and there's a lot of business behind it at this point, I think that there is definitely a case to be made more and more. I think that as more and more really important inventions run into protection problems, there's definitely going to be momentum building.

**ANNSLEY MERELLE WARD:** I have a bit of a philosophical question for the panelists. Should AI be protected by patents or trade secrets? From a philosophical IP incentivization, public good perspective, how should IP protect AI? Colin, hand up?

**COLIN BIRSS:** I would say not trade secrets, and the reason is because the whole point of our patent system was to make inventions public. One of the whole points of our patent system is to make inventions public in order to advance human progress. Using trade secrets is completely the antithesis of that. That's why, if it's not fit for purpose, we need to craft a patent system which incentivizes people making their inventions publicly available so they can be reproduced by other people. That's the whole point. You get a time-limited monopoly for it instead of an infinite monopoly for not making it public, which is completely bonkers. That's my answer to your question.

**ANNSLEY MERELLE WARD:** Anyone disagree with that? Oh, Stephen may or may not. We don't know, let's see.

**STEPHEN BURLEY:** No, I'm not going to disagree with that. I'm a patent guy. I think patents are going to work. I think that there are technical problems, there are always technical problems with the introduction of new technologies. You look at any groundbreaking patent is usually 500 pages long instead of 20 pages for more mature technology. We're just going to have to figure it out, I think. I do think that like computer-implemented inventions, we've been struggling with them for decades, nobody seems to have come up with a clear answer to that, I think we just need to keep working. Patents, I think, is the way to go.

**ANNSLEY MERELLE WARD:** I'm conscious that some of our time has been overflowing. We're going to just move over to Susie Wilson who is the general counsel and associate register of copyrights at the US Copyright Office,

which is behind her on the screen that you can see with the beautiful flags flying. Over to you Suzy from the copyright perspective.

SUZANNE WILSON: Annsley, thank you so much, and unfortunately, that's not a true picture of what our weather looks like today. It looks quite a bit more cloudy but so I'm going to discuss actually how US law treats artificial intelligence in the makeup copyright context. We have also had Dr. Thaler presenting his views both to our patent office and recently to the copyright office. On the patent side, by the way, he was also rejected and on the copyright side, he filed a copyright registration for a two-dimensional work, which was a picture that was kind of pretty and called a recent entrance to paradise.

His claim, which might be a little bit different than the other context we've been talking about in terms of patent, was that there was no human involvement. The actual author of the picture was his machine which he calls the creativity machine. That he was the owner of the registration because it had been transferred to him from the author due to his ownership of the machine and as a work made for hire. We were presented with a situation where he claimed no human involvement at all, and that the work was autonomously created by a computer algorithm.

This was refused registration at the first instance, and he challenged it twice within the copyright office on the grounds that the US laws' requirement, though I'll explain where it sits in the law, that there must be a human author was unconstitutional. He claimed that there was no legal support for the position of the copyright office takes requiring human authorship. In fact, and in the cases that we cited in our decision denying his request for reconsideration of the registration denial, goes back to the 1880s when photography was being copyrighted.

In that case, interestingly, what had happened was someone had taken a photograph of Oscar Wilde, the author, and a lithography company had made copies of it and distributed. The entity that had copied it claimed, well, there's no copyright to be protected in this photograph because all the purported author of the photograph did was aim a machine, the camera at a depiction of real life, and therefore, there is no human author and copyrights should be denied. It went all the way up to our US Supreme Court and which the Supreme Court found that, in fact, what we look at when we're determining copyrightability in the United States. For us, the copyright sits in our constitutional or the right to copyright.

What they found was this was not simply a machine the camera being simply pointed to take a snapshot with no human involvement because the photographer had, in fact, posed Oscar Wilde, put other elements into the photo, selected the costume, thought about the lighting. And all of that ended it up, basically, suggesting and evoking a desired expression of the author. By doing so, that meant that the photographer, in fact, was the author and had a copyright in the photograph. Then this Dr. Thaler, by the way, also contended that we were only relying on very old cases and not anything new.

The fact is that line from the 1800s has been continued through and more recently, perhaps not, surprisingly, coming somewhat from my home state of California that there were copyright challenges to books that were claimed to have been written by celestial beings. That there were individuals that said they simply

received messages from spirits and celestial beings. They wrote them down, they put them in a book, and they got a copyright for their book.

Somebody else claiming to be the author, *The Human*, somebody else copied the book verbatim, and the argument was made, it is not copyrightable because it wasn't actually a human creation because it was the beings and the spirits who had written the words. What the court found was, in fact, because the human author had selected questions to ask the spirits and had put both the questions as well as the answers and arranged them all in the book, there was copyright to the entire book. Though the court, the Ninth Circuit did note that if somebody was simply copying the statements of the spirits if that would not be copyrightable.

I think where this leads us though, is that this did not answer the question, even though our decision has gotten a lot of press around this. It didn't really answer the question of where that line between human involvement with artificial intelligence that results in creative work such that the human involvement is at a level that can obtain copyrightability. In that regard, just a second. We really need to look at, in each case is the computer merely an assisting instrument or is the artificial intelligence program or the algorithm actually conceiving and executing all the traditional elements that create authorship. In the case, we had recently involving Dr. Thaler because he had disclaimed any human involvement at all, that was a very straightforward answer.

**ANNSLEY MERELLE WARD:** Thanks so much to the authors. This is fascinating, and that case about celestial beings writing a textbook. I can't judge because I'm from New Mexico and we have a whole world of aliens and things going on there, but that is really fascinating. It raises an interesting question again, which goes again, straight to the heart of IP systems and IP rights, particularly in copyright. Which is who is the author and why do we define the author as such, because of this kind of romantic in France, really romantic notions of creativity and labor and investment and expression of one's soul.

Going all the way back in the history of economic and moral copyright systems where we are now, what is an author? Given the tools and technology that are available to authors nowadays? How would the copyright office go about looking at those policy issues? What questions do you have to ask to whomever? Who are those people to help inform what that policy is or where that line should be drawn?

**SUZANNE WILSON:** Well, I think as was touched on by one of the prior speakers. I think it was from Australia though, I'm trying to remember which one, is that there really is an exchange being done to get the benefits of copyright right in the United States, that you are an author in the United States. By creating a copyrighted work, the government is granting you copyright benefits in exchange for you contributing that additional creativity and invention into society. At bottom, under our constitution that currently sits with individuals, not with machines. As was noted earlier because there is really no incentivizing a machine to provide additional works or continue to develop additional creativity.

Just to note one other part of our opinion, we did say that there could not really be a work-for-hire arrangement between the machine and Dr. Thaler

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because the machine cannot actually enter into contract or an employment agreement. Going to your point of, okay, what is that level of creativity? I think that really goes back to some of the things that were looked at in terms of the older case involving photographs.

They really looked at, okay, what are all the elements of what did the human author contribute versus simply perhaps randomly setting up the camera somewhere and taking photos and having an automatic timer. Now, I could see an argument even in some situations like that where there would be human involvement and creative decision-making being made in terms of where you set it up, what your timing is. But, the idea was simply that there needs to be what is the creative contribution that the individual author is providing? Is that sufficient to grant copyright protection?

**ANNSLEY MERELLE WARD:** Do you think that this is a problem that creators are going to be having in the future, such that it's going to be, again, something we need to look at legislatively? Do you think that this is something that the courts can sort out for themselves?

**SUZANNE WILSON:** I actually think it's something that can be sorted out for itself, at least as it stands now. In part, because even in the situation that we considered, we had to take at face value Dr. Thaler's statement that there was no human involvement at all. In most cases, I think people who are creating something using computer algorithms or using some other type of machine learning, would likely explain what their part was in creating the eventual output. There are inputs, and as Sasha mentioned, there's data, there are other pieces that have to go into what is created but I think there probably is a line at which so much that the human author is doing, or the purported author is doing so little, that there wouldn't be a copyright that could be protected.

**ANNSLEY MERELLE WARD:** Helen, you haven't muted yourself. Go for it.

**HELEN CONLAN:** Yes, I think it's a fascinating discussion. For me, the DABUS litigation around the world is a vehicle for this discussion that has been ongoing at some level for many, many years. It's just a reflection of what's going on in the industry. Back to Colin's point, we have this legal discussion in a strange vacuum if we think that some form of AI, or some form of software that learns as it goes along, hasn't been used for many, many years indeed.

I think we need to always remember why we're doing what we're doing, even that original patent bargain was about innovating and driving innovation. We can't forget where we are. We need to look back and see that actually, this has been going on for a long time. In the UK, I think on the patent side, we've rather conflated an administrative issue into now a bit of a problem, that we need to find a resolution for. We dealt with it in copyright.

Suzy, you just mentioned that line in copyright of where does the human effort in composing or bringing together a copyrighted work. That's an ever-moving thing. Same in patents, same in innovation. We're going to have the involvement of computers. We're going to have the involvement of AI. Really, the more pressing question I think, rather about than who is the appropriate owner of AI, is what that does to our patent system? The questions about inventorship, of

validity of patents, particularly on the obviousness side. I think that DABUS has been a brilliant vehicle for part of that discussion, but the real issues are yet to come and yet to be discussed.

**ANNSLEY MERELLE WARD:** John, if you're still awake, and compensated [laughs] at this time what would you like to add to that session?

**JOHN LEE:** Look, Ann, that it is an incredibly interesting discussion, and we're going to hear a lot more about it. The law currently, I think, in every jurisdiction as I understand it, is not well-placed to manage how we deal with AI. I think we're going to need some change, but that's going to be at a policy level. I see it certainly in Australia as a fairly difficult road. We may end up following some of our peers in terms of what's happening in the UK and the US. It'll be interesting to see how things develop.

**ANNSLEY MERELLE WARD:** John and Helen, and anyone else, if you were talking directly to a legislator who comes to you and says, "All right, we're about ready to look at this. We're going to write some legislation." What are the things that we should do? What are the things that we should avoid? What are the danger areas? What would be those things you would tell them? Colin?

**COLIN BIRSS:** Well, I should just pick it up on Sasha. She mentioned a real issue about sufficiency problem with AI inventions. Not the case of AI, the inventor, but the cases where the patents, the inventions involved AI. It occurred to me that actually, we have a ready-made solution for that, which I've never thought of until just listening to this discussion. That's the Deposit System, which we put in place for microorganisms. Which was to solve exactly the same problem in the 1970s when we could grow bugs which made stuff that we couldn't make any other way.

The only way you could have a sufficient disclosure of an invention, which was a material, or a protein usually made by a bug, was by depositing the bug. That meant that you had a sufficient disclosure, and we put laws in place to mean that people could get access to it, and they could make it that way. It sounds a bit wild, but maybe it's not such a crazy approach for AI dealing with the problem of data sets and everything else. By saying that if you want to have an invention of that sort what you need is an international deposit system, for whether it's the data to training data or the algorithms, I don't know. I'm not qualified to say, but what about that?

**ANNSLEY MERELLE WARD:** All right, that sounds good to me. That's actually a point, Helen, raised as well in our prediscussion about, given that AI is constantly evolving. You need to fix it upon time as well. You do that in terms of this is the AI as the date, and also that helps with the sufficiency. That's Helen's point, so I'll let Helen expand on that.

**HELEN CONLAN:** That's exactly it, Annsley. The thing is, we've already done it. What I would say to legislators is, "Look at what we've already done, don't forget." Don't think that you have to start again. There are some things that do work, and this doesn't represent such new issues that we need to wipe the slate clean. I think that Colin makes a good point about the deposit system that is there, and there's no reason why it can't be something that is considered more thoroughly in the future. I think having that discussion is a sensible one.

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Broadening out the UK are doing, they have their reviews and their consultations going on, but the real discussion is certainly yet to come.

ANNSLEY MERELLE WARD: Stephen?

STEPHEN BURLEY: Oh, yes. Look, I think this is interesting. One of the issues that always seem to bedevil discussions of the AI is defining what a AI is at any given point in time. The evolution of this problem is happening before our very eyes. Frequently, with the legal system is about a decade behind, perhaps, a little bit more or less, the latest cutting-edge developments. Seeing the evolving system, I do think that intellectual property regime has been structured to cope with radical developments in technology.

I don't see why patent and copyright systems can't be-- If there's a tweak, it should be minor. I like Colin's idea. At first blush, it sounds terrific, about a deposit system, but I don't think we should be talking about root and branch changes, but consequences. But, consequences unforeseen happen when that sort of thing happens that tweaks possibly.

ANNSLEY MERELLE WARD: John, and Sasha, what about you?

SASHA ROSENTHAL-LARREA: I have to agree with that. I go back to something that Helen said, which is the legal position, that's been the incendiary legal position that was taken by Dr. Thaler that the AI actually was the inventor. It's interesting because the German decision that we just got the reasoning for actually approved the inventor to be Dr. Thaler who prompted the algorithm to invent. That really just seems like a much more rational solution than giving legal personhood to artificial intelligence, particularly because as we look forward, we're talking about how this technology is going to develop.

At some point, people think in the next 10 to 20 years we're not just going to have artificial general intelligence, which doesn't even need to be set to a task, but we're eventually going to get to a point where there's artificial superintelligence. Having legal personhood in place has really just consequences we can't even possibly fathom. While I think that Dr. Thaler's legal position is very interesting from a thought exercise perspective, there is a readily available solution that the German courts were happy to approve.

JOHN LEE: I would just add that whether it's twigs or root and branch, we've got to be careful about the consequences. I think there are some difficulties, but that's certainly not a reason not to try. I think we collectively have to grapple with this and solve it. It's not going away. We just need to be a little careful about some of the implications. Just another quick example of a potential issue is the whole entitlement flowing from inventorship, certainly in the Australian law.

Where you have human inventors, you can interview these people, and they can give evidence about their contributions. Complexities arise if the inventor is AI. Having said that, perhaps in fact you get a better record from AI in terms of being able to interrogate it about its contribution. It's impartial, and that may be a solution to that issue. I think there's pros and cons. It's going to be very interesting to see how this plays out.

ANNSLEY MERELLE WARD: I think from my perspective as well, I always worry about fragmentation. Different countries doing different things, and then we start to have from a litigator's perspective a race to courts, and fun game,

and all of this. You can really see that as a potential that this could happen. Some countries putting legislation that's super favorable to something, and other people not. Where it makes it more difficult. How do we solve for that? It's always difficult, IP on an international legislative perspective. What can we do about that? Helen?

HELEN CONLAN: I wasn't going to pick up on your jurisdictional point, but others may. When you mention the litigator point, I put my litigator hat on. I've been doing this for a while. I think about the practicalities of litigating where I have some issue with AI, and how AI looking at that, at how it evolves over time. The point that you raised a while ago. I'm thinking, how on earth am I going to go about demonstrating the capabilities of a particular AI at a given time? These systems evolve over time. Am I expecting industry to keep some record of the capabilities of their AI? If it's the case that I'm trying to demonstrate what was available to a skilled addressee of a patent at a point. That troubles me. How in practice is that really going to work?

ANNSLEY MERELLE WARD: That exercise actually calls for almost a mock trial with these kinds of issues. We can work through from start to finish the issues that litigators would have to figure out what [crosstalk] to do before they get--

HELEN CONLAN: Sounds like fun, we can do that.

ANNSLEY MERELLE WARD: We should do that. Just in the Q&A chat, Phillips has also said, I was going to ask about the multilateral norm-setting in this area. Should that be something that we need to be focusing on? I'm seeing nodding of heads.

SASHA ROSENTHAL-LARREA: Well, just to start off the conversation here. I agree, and I'm also nodding my head. I think that there is obviously fragmentation is an issue when it comes to all aspects of IP. I think when it comes to artificial intelligence and inventorship, it's such a critical component that there really does a need to be some multilateral consensus building because fragmentation is going to be a much bigger issue. You can't even identify the inventor of an invention, and whether or not it can be patented. It really is orders of magnitude more of an issue than what I'll call ordinary force fragmentation.

ANNSLEY MERELLE WARD: Stephen?

STEPHEN BURLEY: Oh, yes. Actually, Sasha's pretty much said it then. I think, usually, you start with something, with anything as big as this which is going to have enormous social ramifications also. It doesn't usually start with a pretty hot mess around the world and then sort itself out through a number of cases and think tanks and so forth. I don't see this as any different as a matter of process, as a matter of subject matter. It is quite different, but the process I expect will be the same. There needs to be a lot of international effort on coordination, which they seem to be doing from what I've read.

ANNSLEY MERELLE WARD: Colin?

COLIN BIRSS: Oh, just to say, I'm just going to put in a plea for copyright because we talked a lot about patents, which is because it isn't an important issue in that area. It is also an important issue in copyright. The thing

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that strikes me, and the harmonization, the multinational aspect is just as important because copyrights are, ultimately, just as international as patents.

Curiously, as I said in the beginning, the UK has had this law which has allowed for computer-generated inventions to be subject to copyright when there's a person who's set up the computer. It has achieved absolutely nothing. [laughs] It hasn't caused any huge problem, but then it also hasn't caused a horde of other states to go, "Golly. That's a great law, we should copy that law." Neither has happened, so maybe this is not quite as big an issue as it might seem, although it's good fun to think about.

**ANNSLEY MERELLE WARD:** In the final minute, I'm just going to go around and just ask you if you could have all the lawyers, and all the legislators, and all the manpower, and women power, and people power in the world for the next year to solve one issue in AI, what would it be? What is your hot button issue in the hot mess of AI at the moment? I'm going to go to John. What would it be? What's the thing that troubles you most?

**JOHN LEE:** I would use it as a vehicle to solve the eligibility issue.

**ANNSLEY MERELLE WARD:** [silence] Okay, Stephen?

**STEPHEN BURLEY:** Look, I think I'd direct it towards validity issues of computer-made inventions. I'm interested to see whether the system will crash.

**ANNSLEY MERELLE WARD:** So to speak. What about you, Sasha?

**SASHA ROSENTHAL-LARREA:** I'm going to concur with John, and say it would be fixing the eligibility issues that we have. It's just of such paramount importance to industry, and particularly in a field that is changing so rapidly and advancing so rapidly.

**ANNSLEY MERELLE WARD:** Suzy?

**SUZANNE WILSON:** Well, I think in copyright we are seeing in a different situation as different position than patents. I would actually say I don't think I have that issue. What I would like to see over the next couple of years is simply how this develops in the copyright space, as perhaps AI is used more in some creative industries.

**ANNSLEY MERELLE WARD:** Helen?

**HELEN CONLAN:** Everything's potentially obvious problem that we could get down the road.

**ANNSLEY MERELLE WARD:** Finally, Colin?

**COLIN BIRSS:** Well, I think everything may well turn out to be potentially obvious, but that's great because that means everything will be available.

**ANNSLEY MERELLE WARD:** [laughs] Down with the patent system. All right. On that bombshell of a note, thank you all for participating. It's been a fabulous session. Remember to socialize, and mingle in the remote breaks, and networking. Once again, thank you all for our esteemed panel of human intelligence on artificial intelligence. We look forward to hopefully seeing you in New York next year. Bye, everyone.