

# WIPO CONVERSATION ON INTELLECTUAL PROPERTY (IP) AND ARTIFICIAL INTELLIGENCE (AI)

## PERSONAL DETAILS

I am Mr Ron Marchant CB FRSA and I am making this submission as an individual and not on behalf of any organisation with which I have been associated with, either in the past or in the present. I joined the UK Patent Office (now the UK Intellectual Property Office) in 1969 as a Patent Examiner and later became a Principal Examiner responsible for the Personnel Management of Patent Examiners and the relocation of the Patent Examiners to South Wales. I also worked within the team that introduced IT to the Patent Office. Following that I became Director of Patents and Designs and then Chief Executive and Comptroller General. I retired in 2007.

## SUBMISSION

### PATENTS

As will become clear from my answers to the issues raised, I have had concerns by the way the patent system has been evolving, and I will summarise those and raise more questions after I have addressed those issues. I recognise that my thoughts are not fully formed and open to many objections, not least from me. Therefore, I welcome and agree with your statement that the current exercise is but the opening of the process.

#### Issue 1: Invention and Ownership

The concepts of invention and inventorship have long been intrinsically bound to the working of the human brain, it's thought processes and how they produce creative thinking in response to problems being solved or objectives to be achieved. It seems to be the concept of intentionality as used by philosophers is closely connected to the way we use these concepts.

Against this background and our current knowledge of the AI process, it seems to me inappropriate for a device, albeit an extremely sophisticated device, to be regarded as an inventor. Rather the device is another tool used by inventors who are human.

Of course, under patent law all rights accrue to the inventor or to someone (an individual or legal entity) who as a recognisable title to the invention. It strikes me as a bizarre proposition to assign property rights to a device and then have to put in place arrangements to hand them back to an individual or a legal entity.

Whether an AI generated "invention" is patentable depends on the usual criteria unless we decide to open a debate on the whole patentability question. However, in terms of novelty, an AI generated "invention" can be novel and of industrial

application. But can it be inventive, i.e. not obvious. The question then is whether obviousness is regarded as a matter of the objective difference between the “invention” and the prior art; or is it a matter of the process by which the difference has been achieved. To date judicial thinking has tended to require more than just a lot of effort in working through the possible solutions to the problem, something AI and big data can do far more effectively than a human brain. The current definition refers to the solution not being obvious to someone skilled in the art. In other words, it requires a leap of creativity by a trained human brain. Without seriously stretching the concept of creativity we cannot allocate it to AI and big data.

### Issue 2: Patentable Subject Matter and Patentability Guidelines

My response to whether patent law should exclude AI generated “inventions”, in line with my thoughts above is obviously “yes”. That response is reinforced by the inclusion of the word “autonomously” in the question. If we took the step of allowing autonomously produced inventions, then the debate about obviousness would simply shift to one of degree of autonomy. Great for lawyers and philosophers, but not good for fast-moving technological capability.

My answer to the second question here would be to treat AI and other computer assistance the same way.

If we do go down the road of AI invention granting, then of course examination guidelines will have to be rewritten. In time legal decisions will lead to changes as the implications and results of AI inventions are considered, but even the first drafts will need to be based on clear decisions about best practice. Getting international agreement on that aspect of substantive patent law is likely to prove difficult in the light of experience to date.

### Issue 3: Inventive Step and Obviousness

My comments above have covered these issues, but I would like to expand a little on the specific questions as follows:

- (i) This question is not entirely clear to me. It seems to mirror the objective/subjective difference I mention above. Or is it saying that the art is somehow referring back to the properties and nature of the AI “inventor”. In other words, are we saying if the AI is “normal AI” (whatever that may be) the invention is obvious?
- (ii) This question illustrates the strange territory ahead. Instead of assessing the capacities of the human brain in invention, as at present, we are simply transferring that to the obviousness of the outcome for the trained AI. But how obvious is the algorithm itself?
- (iii) The implications are that we spend time arguing on issues which are totally unclear to the average innovator and risk damaging the credibility of patent law.
- (iv) Of course, it should. Once created, whether by AI or not, information is information and either in the public domain or not.

#### Issue 4: Disclosure

First, we have to remember that patent disclosures rarely – if ever – are as clear as even IKEA assembly instructions. They are instructions in highly general terms. Which is why we have to employ our old friend the person skilled in the art to decide on the acceptability of disclosure. AI inventions would be the same but much more complex because we would have to consider the relationships between different AIs and different versions of the same AI. Even just writing this out highlights the swamp into which we are walking. Regarding the specific questions, I feel unable to offer a helpful answer for reasons which will be clearer from my conclusions. The exception is question (v), where I simply wonder how “the human expertise used to select data and to train the algorithm be required to be disclosed” could be satisfied. What does the specification say? The question implies the primacy of the AI creator (a human or another AI?) who then must link his/her actions to the results of the AI they created. Where is all this going?

#### Issue 5 General Policy Considerations for the Patent System

This for me is the core of the whole question. And as it applies to the whole field of intellectual property, I will cover it in my conclusions. For the moment, I simply say that the need to ask such questions to my mind subverts much of our accepted rationale for, and current structure of, the IP system.

### COPYRIGHT AND RELATED RIGHTS

#### Issue 6: Authorship and Ownership

The principles here are the same as for patents but perhaps more problematic. It could be that the answer would be different for different subjects of copyright. We use copyright significantly beyond the realms of art, music and literature for which they were first introduced. The issues of originality and impact on the viewer, listener or reader entail questions about human perceptions and psychology well beyond the technical issues behind software copyright. But, in general I have reservations about allocating rights and ownership to devices. Even posing the question of *sui generis* rights raises the question why we are creating any rights at all, and what does this mean for the basis of intellectual property.

#### Issue 7: Infringement and Exceptions

It begs the question to state that “AI can produce creative works”, but the questions that follow do not depend on acceptance of that statement. Taking these in turn:

- (i) Surely the use of data under copyright as part of the big data used by copyright would have to be allowed or there could be a potential block on learning in general. The normal link between the infringing act and the impact on the rights holder should be the only consideration.
- (ii) The impact would be seriously detrimental on future development to the free flow of data; however it is used.

- (iii) The exception referred to would be hard to determine. How much of a gap between the output of the AI creator and the commercial exploitation of that output would be allowed. After all, any research could lead to a commercial product.
- (iv) To distinguish between AI use and data and text mining would be difficult to define and hence the operation of this and other exceptions open to regular challenge.
- (v) It is difficult to see how a coherent policy could be applied to the question asked.
- (vi) This seems related to question (iii), because unless linked in some way to a commercial activity it seems detection would be impossible.

#### Issue 8: Deep Fakes

I would be strongly averse to entangling copyright in the issues of deep fakes. Given that the antagonism is caused by the adverse impact on the person depicted, I imagine the right to payment for the use of the deep fake would not be a reedy. It might be seen to undermine their indignation.

#### Issue 9: General Policy Issues

For me the question underlines how it is becoming increasingly difficult to give a credible hierarchy of IP within myriad social issues and policy.

### DATA

#### Issue 10: Further Rights in Relation to Data

Despite a generally negative attitude to the protection of data (information) I also think that the notion put forward in paragraph 23 that we should look to expand IP into IP rights wherever we recognise a new source of commercial value has no justification.

### DESIGNS

#### Issue 11: Authorship and Ownership

Issues here are same as for other forms of IP. In addition, given that design depends on eye appeal the question of disputes could be interesting.

### TECHNOLOGY GAP AND CAPACITY BUILDING

#### Issue 12: Capacity Building

The issue of AI doesn't just alter this question but exacerbates it. The matter isn't just a matter of differences between countries at different levels of development and how we can improve access. Rather the ownership of big data and the technology to exploit it will cause huge disparities in commercial power within every society and

challenge our common assumptions about equality and citizenship. It will reopen the question we think that we can answer in most cases at the moment, namely, what is the societal benefit of handing market power to individuals.

## ACCOUNTABILITY FOR IP ADMINISTRATIVE DECISIONS

### Issue 13: Accountability for Decisions in IP Administration

The more fundamental question is whether we should allow AI decisions at all. Evidence to date is that the decisions are heavily biased by the inbuilt bias of the creator's algorithm, so that the decisions are predetermined and not subject to judgement. So, first we need openness about the creation of algorithms. We then need to have a clear process for challenging such decisions. Would we allow another AI to decide the appeal against a decision by a first AI? I doubt it. Decisions need to be made by human participants.

## TRADEMARKS

The paper doesn't raise these, but it seems that there could be issues. Trademark examination and disputes involve the question of how similar in appearance conflicting Trademarks are. The question that arises in these is whether a consumer is likely to be confused by the similarity of Trademarks. If AI were to be used in the creation, examination or dispute resolution, then exactly the issues covered above would arise.

## CONCLUSIONS

Reading the above, I accept that I leave many – too many – matters unclear. For that I am sorry, but I am unclear myself. Let me explain.

Those who know me, will know I have been unhappy for some time with the mantra that IP encourages invention and creativity, and hence is a human good. That was THE mantra when I first started in the IP world. I accepted it for only 4 or so years. After reading "The Economic Impact of the Patent System by C Taylor and Z Silberstone, 1973" I realised that patents weren't the only incentive for R&D in industry. I also realised that invention and creativity are not simply economic activities driven by monetary considerations; they are basic human characteristics. The attention paid to innovation and its relationship to the economy emerged later and the mantra changed to IP encouraging innovation, innovation being different to invention and being very much an economic activity. That's fine. I accept that IP has been a valid tool for encouraging innovation. It is a legal construct to grant and regulate monopolies that has worked pretty well. There have been problems about the balance between social benefits and private profit, particularly in medical technologies.

In recent years the problems have increased owing to the emergence of new technologies and their importance to the economic and industrial structures of nations. Thus biotechnology, software, and now AI have proved to be difficult when

we apply IP law and precedent to them. These precedents were built up in a very different technological environment.

The problem arises because these technologies by their very nature raise the question of the extent to which something new is the created or inspired by human mental activity. This latter is normally judged to be required to different invention/creation from copying with slight differences or repetitively applying possible solutions to a problem until one of them works. The distance between an invention and both it's prior art and following infringements is judged by the human originality defining that gap. In judging this we try to force these technologies into our existing legal structures and the rationale and justifications behind them. Thus, we stretch our existing concepts to breaking point. Maybe AI has, or will in the future, take this stretching to breaking point. The complexity and implications of the questions asked in the paper constitute an almost metaphysical analysis of invention and creativity so as to underpin a legal construct to achieve economic purposes.

Perhaps now is the time to discard the metaphysics and remodel the system sole in economic terms. Should we say simply give limited monopolies to anything that benefits society without analysing how it arose. Of course, we can simply exclude certain areas from such privileges, as we do now. We do so on the basis of moral and political decisions, but we would not be theorising about whether AI is analogous to the human brain or whether electronic devices should acquire the rights and privileges (and obligations?) of human beings. Or whether there is an issue of moral rights. There will be lots of issues to decide, such as how different to different products or services need to be, whether non-use removes the right, the length of the right, and rules of ownership. But we would be focussed where we should be, namely, to costs and benefits of monopolies.

But that's a wholly different avenue .....

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