

THE DRAFT MODEL GUIDELINES ON IMPLEMENTATION OF IPR POLICY FOR ACADEMIC INSTITUTIONS: A CRITIQUE

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Healthy collaboration between research institutions and the industry forms the bedrock for the technological development of any nation. It is desirable that research conducted by public funds should be translated into products and services in the wider public good. To help realise this objective, the government of India has issued draft guidelines on 'Implementation of IPR Policy for Academic Institutions' of the country. It emphasises and prioritises IPRs as a vehicle of commutation between research institutions and the industry. Are these guidelines potent enough to fulfil their aim? Also, would they not impact nature along with the quality of research coming out of public-funded institutions? These questions are of tremendous relevance as the draft guidelines, although hitherto hidden in oblivion, would dictate the terms of engagement between the academia and the industry in the foreseeable future and would also be a significant factor in shaping the research and developmental ecosystem of the nation in the times to come.

I. INTRODUCTION

The Government of India ('GOI') in 2016 approved a new National Intellectual Property Rights Policy to spur creativity and to stimulate innovation. The policy lays down the roadmap for the future of Intellectual Property Rights ('IPR') in India. The policy outlines seven objectives that it seeks to achieve. Amongst them, two objectives of prime importance are stimulating the generation of IPRs (Objective 2) and its commercialization (Objective 5). The policy document posits that the talent pool of science and technology spread over Research and Development (R&D) institutions, enterprises, universities, and technical institutions needs to be tapped in the form of Intellectual Property ('IP') assets. The argument does hold water in light of the fact that notwithstanding the demographic dividend and quality institutions that India has, the

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country's share in global R&D expenditure is a mere 2.8 per cent. Whereas, the contribution of countries like the United States of America ('USA') and China has mounted up to 31.9 per cent and 29.1 per cent respectively.¹ The Policy advocates creation of a platform or framework to connect investors and IP creators as a step to capitalize on the IP assets in the nation.

The National IPR Policy tasked the Cell for IPR Promotion and Management ('CIPAM') with the responsibility to provide a platform for creators and innovators of IPR to be connected with potential users, buyers and funding agencies. It also endeavored to promote licensing and technology transfers of IPRs to enable commercialization of IPRs, thus creating IPR based products and services.² Fulfilling its mandate, CIPAM in September 2019 has published the draft model guidelines on implementation of IPR policy for academic institution ('the draft guidelines').³ The draft guidelines solicit vesting the ownership over IP generated out of public-funded research to academic institutions. They further promote assignment and licensing of the IP so owned by the academic institutions to industries for commercial exploitation. The draft guidelines are primarily aimed at alluring the industry to collaborate with academic institutions by providing better clarity on IP ownership and its licensing. The fact is that, even though Indian academic institutions have been spirited in their research pursuits, their interactions with the industry have hitherto remained minimal.

In this article, we present a critical review of the draft guidelines and argue that the guidelines have not been fine tuned to yield the desired results. To bring home our contentions, we rely extensively on the experience of the United States with the University and Small Business Patent Procedures Act, 1980 ('the Bayh-Dole Act')⁴ and the debate that begun with the introduction of Protection and Utilization of Public Funded Intellectual Property Bill, 2008 ('the 2008 Bill') in the Rajya Sabha. Although the draft guidelines extend to trade mark, copyright, and other intellectual property rights, the article only analyses them from the perspective of patents, as they constitute the lion's share in public-funded research. We scrutinise the draft guidelines against two fundamental questions. Firstly, is it desirable that publically funded research should be protected (under the Patent law regime)? Secondly, if the answer to the previous

¹ R & D Expenditure Ecosystem—Office of the Principal Scientific Adviser 21, available at <<http://psa.gov.in/sites/default/files/pdf/RD-book-for-WEB.pdf>>.

² Ministry of Commerce and Industry, Department of Industrial Policy & Promotion, Government of India, National Intellectual Property Rights Policy 14-15, ¶5.1.1 & 5.2, 12/5/2016, available at <https://dipp.gov.in/sites/default/files/National_IPR_Policy_English.pdf>, last seen on 31/1/2019.

³ Cell for IPR Promotion and Management (CIPAM), Model Guidelines on Implementation of IPR Policy for Academic Institutions, available at <https://dipp.gov.in/sites/default/files/Draft_Model_Guidelines_on_Implementation_of_IPR_Policy_for_Academic_Institutions_09092019.pdf>, last seen on 31/1/2020.

⁴ The statute is widely recognized by the name of "Bayh-Dole Act". The pseudonym is derived from the name of its sponsoring senators Birch Bayh and Bob Dole.

question is in affirmative, is the framework laid down by the draft guidelines the best way to go about it? However, before we take the draft guidelines to the task, it is important to briefly discuss the structure proposed by the draft guidelines.

II. SUBSTANCE OF THE DRAFT GUIDELINES

The draft guidelines have been proposed with the prime objective to promote collaborations between academia and industry through better clarity on IP ownership and licensing.⁵ They proceed on the hypothesis that it would result in the creation of a mechanism for knowledge generation and its commercial exploitation. This inference seems plausible as the university-industry interface has remained sub-optimal and institutional research has failed to contribute to industrial catch-up in India adequately.⁶ The draft guidelines are structured on the idea of patenting as an obligation, technology transfer as a necessity and royalty as a right to inventors. Taking a cue from the Bayh-Dole Act, the draft guidelines vest the ownership, ordinarily, in the academic institutions in those cases where the invention has been developed by utilising the resources of the academic institutions. In certain cases mentioned in the draft guidelines, the ownership of patents can be vested in the inventor itself, if the academic institution so determines. The draft guidelines then suggest the commercialisation of the inventions so created by way of assignment and licensing, which may be exclusive or non-exclusive.⁷ A flexible mechanism is provided for commercialisation of inventions which allow institutions to exercise its discretion in choosing the method of commercialisation.

III. LESSON FROM THE PAST

The draft guidelines have been brought forth with a pious intention to effectuate an object beneficial for all the stakeholders involved. In ordinary course, such reformatory measures ought to be given due time until tangible results are visible before any credible criticism is to be made about them. However, the draft guidelines although novel in the Indian context, are already in force in other countries from as early as the 1980s. Moreover, attempts were made by the GOI in 2008 also to pass a statute more or less identical to the present guidelines which could not be crystallised into a parliamentary Act. The Bill was referred to the Department-Related Parliamentary Standing Committee on Science & Technology, Environment & Forests ('Standing Committee') that gave its report in 2010. In its report, the Standing Committee opined that the assertion in

⁵ *Supra* note 3, at 4.

⁶ A.S. Ray and S. Saha, "Leveraging Public Funded Research for India's Economic Emergence: The Role of IPR", in Julia Melkers, Thema Monroe-White and Susan E. Cozzens (eds.), Atlanta Conference on Science and Innovation Policy Proceedings10, 10.1109/ACSIP.2011.6064483 (2011), available at <<https://smartech.gatech.edu/bitstream/handle/1853/42504/483-1585-2-PB.pdf>>, last seen on 31/1/2020.

⁷ *Supra* note 3, at 11.

the statement of Objects and Reason of the Bill to make universities financially self-reliant were ‘unfounded’ and further advised against adopting a one-size fit all policy of licensing.⁸ The government later withdrew the Bill from Rajya Sabha in 2014.⁹ Analysing the American experience of forty years and the arguments that derailed the 2008 Bill, we argue that the draft guidelines are a misfit for the Indian public funded academic institutions and its research ecosystem.

The possibility of the draft guidelines achieving their aforementioned objectives hinges upon certain postulates. These postulates, in view of some academicians, are at best unverified hypothesis.¹⁰ The discussions on contentious issues like whether patenting is the best method of transfer of technology, or whether vesting ownership of inventions in universities would incentivise research, and their commercialisation have devoured countless realms of paper, thus putting a question mark on the probability of their success. This section argues that the draft guidelines, if implemented, would do more harm than good to public-funded research institutions for the following reasons.

A. THE TRANSFER OF TECHNOLOGY DILEMMA

The objective of the draft guidelines is to promote collaboration between the academia and the industry and for this, the draft guidelines exclusively emphasises on IP ownership and IP licensing, *i.e.*, transfer of technology.¹¹ In case of inventions, it would translate to *firstly* patenting the invention, and then *secondly* licensing or assigning the rights over the invention to a user willing to commercialise it. However, it is unclear whether the outputs of government-funded projects are more effectively disseminated through licensing or assignment of the patent than other methods available. Technology transfer is only one of the four paths on which university and industry interact.¹² The other three are identified as research support, cooperative research and knowledge transfer. Out of these four, knowledge transfer which broadly refers to formal and informal interactions, cooperative education, co-authoring of papers, employing university

⁸ Department-Related Parliamentary Standing Committee on Science & Technology, Environment & Forests, Rajya Sabha, The Protection and Utilisation of Public Funded Intellectual Property Bill, 2008, ¶11 (2010).

⁹ Press Release, Press Information Bureau, Government of India, Ministry of Parliamentary Affairs, available at <<https://pib.gov.in/newsite/PrintRelease.aspx?relid=113834>>, last seen on 27/12/2019.

¹⁰ See generally D.C. Mowery, B.N. Sampat, “The Bayh-Dole Act of 1980 and University-Industry Technology Transfer: A Model for Other OECD Governments?” 30 (1-2) Journal of Technology Transfer 115(2005); A. Agrawal and R. Henderson, “Putting Patents in Context: Exploring Knowledge Transfer from MIT”, 48(1) Management Science 1 (2002); Gary Pulsinelli, “Share and Share Alike: Increasing Access to Government-Funded Invention Under the Bayh-Dole Act”, 7(2) Minnesota Journal of Law, Science & Technology 393 (2006).

¹¹ *Id.*, at 4.

¹² M.D. Santoro and A.K. Chakrabarti, (2002), “Firm Size and Technology Centrality in Industry-University Interactions”, 31(7) Research Policy 1163, 1164 (2002), available at <<https://web.njit.edu/~chakraba/RES-POL2002.pdf>>, last seen on 31/1/2020.

graduates and personnel exchanges is considered to have far-reaching and long term impact. While technology transferserves more specific and immediate industry needs.¹³

Moreover, within the realm of transfer of technology also, there are various pathways and IPR model is not an exclusive method. There are other pathways like publication, conferences, cooperative ventures, consulting, and temporary personnel exchange, among others. The draft guidelines while suggesting the IPR model strongly advise against publications and public display of work, thus unreasonably narrowing down the route of technology transfer.¹⁴ In a survey done on industrial R&D to assess the influence of public research on the US manufacturing sector, and to find out the share that the above mentioned pathways control, it was revealed that 41 per cent of the survey takers rated publications as a significant source of information on public R&D.¹⁵ On the other hand, for licenses the number was less than 10 per cent. Unreasonable emphasis on exclusive (or even restrictive) licensing of patents has the potential to deter widespread use of research and can impose considerable economic and social costs.¹⁶ Even in a county like Sweden, where the model of commercialisation is entirely different from that of the US, there is a consensus that publications and conferences do permit the industry to monitor and exploit new knowledge produced at universities.¹⁷ Patenting, which forms the core of these draft guidelines, in terms of inventions, only represents a small proportion of all work being conducted within academia and may not be the representative mode of what we have so far been calling technology transfer.¹⁸

Even presuming that the enforcement of the guidelines would lead to widespread patenting, which in itself is an uncertain scenario, there is no evidence to indicate that increased patenting and licensing by universities, or research institutions in itself result in more efficient transfer of research discovery or it's quicker

¹³ A.S. Ray and S. Sabyasachi, "Patenting Public-Funded Research for Technology Transfer: A Conceptual-Empirical Synthesis of US Evidence and Lessons for India", 18, Working Paper Number 244, Indian Council for Research on International Economic Relations (ICRIER), New Delhi (2010).

¹⁴ *Supra* note 3, at 7.

¹⁵ W.M. Cohen, R.R. Nelson, and J.P. Walsh, "Links and Impacts: The Influence of Public Research on Industrial R&D", *Management Science*, 48(1) Special Issue on University Entrepreneurship and Technology Transfer 1, 14 (2002), available at <<https://www.jstor.org/stable/pdf/822681.pdf>>, last seen on 31/1/2020.

¹⁶ *Supra* note 13 at 26.

¹⁷ Goldfarb, Brent; Hendrickson, Magnus, "Bottom-Up vs. Top-Down Policies Towards the Commercialization of University Intellectual Property", SSE/EFI Working Paper Series in Economics and Finance 463, Stockholm School of Economics, The Economic Research Institute (EFI), Stockholm 2 (2001).

¹⁸ A. Agrawal and R. Henderson, "Putting Patents in Context: Exploring Knowledge Transfer from MIT", 48(1) *Management Science* 1, 10 (9/8/2002) available at <https://www.immagic.com/eLibrary/ARCHIVES/GENERAL/MIT_US/M010809A.pdf>, last seen on 31/1/2020.

commercialisation.¹⁹ From the supply side of research also, there is a significant difference in perception of importance between publication and patenting in the world's best-rated universities. In MIT, one of every two faculty members publishes a paper annually, whereas only around one in ten faculty members patent their invention.²⁰ There exists a strong belief that university research is most effectively disseminated to users if they are placed in the public domain without any strings attached.²¹

B. MONETARY INCENTIVES FOR SCIENTIFIC RESEARCH: THE ILL EFFECTS

The guidelines are premised on the presumption that commercialisation of inventions is a beneficial process for all stakeholders, while we argue that there are no grounds to base this presumption upon. Moreover, there are opinions to the contrary that excessive thrust on monetary incentives, beyond the traditional norms of academic rewards, might shift the focus of public-funded research away from 'basic' to more 'commercially oriented applied science' and thus hamper the pursuit and progress of science.²² Also, there is a general anxiety amongst the academia that increased university and licensing would lead to the weakening of academic researcher's commitment to 'open science', leading to publication delays, secrecy and withholding of data and materials.²³ Murray and Stern argue that the productivity of scientific research depends upon the availability of free access to independent follow-on researchers to replicate and extend findings, tools and databases. Whereas most policy analysis assumes that research materials and data are freely available and there is a high fidelity- Patents provide a legal means which aggravate the access to tool cost. Thus, it is totally possible that researchers or universities as the owners of IP may flaunt their rights in a way that places a significant tax on follow-on research, slowing down the process of scientific

¹⁹ J. Colyvas, M. Crow, A. Gelijns, R. Mazzoleni, R.R. Nelson, N. Rosenberg, and B.N. Sampat, "How Do University Inventions Get into Practice?", 48(1) *Management Science* 61, 62(2020). *See also*, D.C. Mowery, R. Nelson, B.N. Sampat, and A.A. Ziedonis, 2001, "The Growth of Patenting and Licensing by US Universities: An Assessment of the Effects of the Bayh-Dole Act of 1980", 30(1) *Research Policy* 99, 102& 103 (2001).

²⁰ *Supra* note 18, at 8.

²¹ R.R. Nelson, "The Market Economy, and the Scientific Commons", 33(3) *Research Policy* 455, 469 (2004), available at <http://dimetic.dime-eu.org/dimetic_files/NelsonRP2004.pdf>, last seen on 31/1/2002.

²² N.T. Gallini, "The Economics of Patents: Lessons from Recent U.S. Patent Reform", 16(2) *The Journal of Economic Perspectives* 131, 142 (2002), available at <<https://www.jstor.org/stable/pdf/2696500.pdf>>, last seen on 31/1/2020.

²³ J.P. Liebeskind, "Risky Business: Universities and Intellectual Property", 87 (5) *Academe* 49, 50 (2001). *See also*, P. Dasgupta, and P. David, "Towards a New Economics of Science", 23 (5) *Research Policy* 487-521 (1994), available at <<https://www.jstor.org/stable/pdf/40252064.pdf?refref-qid=excelsior%3A9265f086c6af041d0457fce780f86699>>, last seen on 31/1/2020.

discovery.²⁴ The strategy of generating funds by licensing technology if only used to the extent of neutralising the cost of fundamental research can actually be a good thing. But this intellectual capitalism actually forces the scientist to create 'products' which in Professor Soumitro Banerjee's view, might be a good strategy in the short run, but in the long run it will have an adverse impact on research.²⁵

This fear is further fortified by the draft guidelines where it cautions the inventors against publishing or publically displaying the invention because according to the draft guidelines, it leads to a lack of novelty and thus makes the invention ineligible for protection.²⁶ This is certainly not the case regarding patents.²⁷ Relevant literature on the issue, Chapter VI of the Patents Act, 1970 (ss.29-34) which governs the issue of anticipation and novelty in case of public display before learned society, or publication has been relegated to footnotes and finds no mention in the body of the guidelines. It clearly shows the approach of CIPAM, which promotes non-disclosure and is inherently pro-secrecy. The Standing Committee in its report in which it thoroughly scrutinized the 2008 Bill also aired similar views. Conscious of the potential of the 2008 Bill to shift the nature of research from 'social sector model' to 'market-driven model' it had made a suggestion to enact separate legislation for promoting the research related to the interest of common man be enacted.²⁸ However, the policymakers have conveniently chosen to ignore the wise words of the legislature.

C. THE INDIAN PECULIARITIES

India is not the first country that is moving forward to emulate the American style of Commercialisation of public-funded research. Both developed and developing countries like- Japan, Germany, Denmark, Norway, China, Brazil have legislations along the line of the Bayh Dole Act to energize the process of technology transfer from their universities. Unfortunately, not much data or scholarship is available to make any opinion on the experience of these countries with the legislation. Nevertheless, numerous words of caution have been written by American scholars to those countries looking to adopt the process of global diffusion of policies. Keeping in mind the phenomena of policymakers 'borrowing' policy instruments from other economies and applying them in very different circumstances, they apprise against the unintended fallouts that may follow. In Sampat's view, a narrow-minded concentration on licensing as the

²⁴ F. Murray and S. Stern, "When Ideas Are Not Free: The Impact of Patents on Scientific Research", 7, *Innovation Policy and the Economy*, 33, 55 (2006), available at <<https://www.journals.uchicago.edu/doi/pdfplus/10.1086/ipe.7.25056189>>, last seen on 31/1/2020.

²⁵ Professor Soumitro Banerjee is a Professor at Indian Institute of Science Technology and Research, Kolkata, available at <<https://www.hindustantimes.com/india-news/increase-in-csir-earnings-through-licensing-tech/story-aRabrVvuOWtYRNZ0CmNIfJ.html>>, last seen on 31/1/2020.

²⁶ *Supra* note 3, at 7.

²⁷ *See generally*, Ss. 29-34, Chapter VI (Anticipation), Patents Act, 1970.

²⁸ *Supra* note 8 at ¶ 11.

only channel for technology transfer can have a chilling effect on the operation of other important channels. There are potential risks to the university research enterprise that accompany increased involvement by university administrators and faculty in technology licensing and commercialisation.²⁹

Indeed, emulation of the Bayh-Dole Act can be counter-productive in India, as a prominent voice of thought says that it has not really been the success that it has been touted to be in the US.³⁰ A great deal of statute's success is credited to a pre-existing strong and expansive intellectual property regime, a recognition of market's role, pre-existing interactions and collaboration between industry and academia, a pre-existing academic entrepreneurial spirit, and an exceeding well-funded high-quality research system.³¹ At the time the US introduced the Bayh-Dole Act, its universities were already involved in cutting edge R&D activities and the US government alone held more than 28,000 patents³² which is simply not the case in the Indian context. In India, the 'industry-academia interface' has not achieved its full potential because of 'basic attitudinal differences and perceptions of technology development between two sides'.³³ Furthermore, the problems faced by research institutions in India do not reflect the challenges in R&D in developed countries. While Indian industry is considered immature, myopic and risk-averse, university research in India is allegedly too tangential to have direct commercial application. Therefore, the possibility of the industry being incentivised to come forward and pick up embryonic ideas from university labs just because they are assured of IPR protection is slim.³⁴ The example of 'Amphotericin-B' is credible proof of the embryonic nature of the research carried out at academic institutions. The drug was developed at University of Delhi with the support of Department of Biotechnology. After clinical trials the drug was licensed to M/s Ace Diagnostics

²⁹ D.C. Mowery, B.N. Sampat, "The Bayh-Dole Act of 1980 and University-Industry Technology Transfer: A Model for Other OECD Governments?" 30 (1-2) *Journal of Technology Transfer* 115, 124(2005).

³⁰ See, K. Nair and B. Nair, "Protection and Utilisation of Public Funded Intellectual Property Bill 2008 – A Critical Analysis of the Indian Bayh-Dole Act", 2(4) *NUJS Law Review* 697, 698(2009) available at <<https://ir.lawnet.fordham.edu/cgi/viewcontent.cgi?article=1432&context=iplj>>, last seen on 31/1/2020.

³¹ D.Greenbaum, "Academia to Industry Technology Transfer: An Alternative to the Bayh-Dole System for Both Developed and Developing Nations", 19 *Fordham Intell. Prop. Media &Ent. L. J.* 311, 318(2009), available at <<https://ir.lawnet.fordham.edu/cgi/viewcontent.cgi?article=1432&context=iplj>>, last seen on 31/1/2020.

³² J.A. Henderson and J.J. Smith, "Academia, Industry, and the Bayh-Dole Act: An Implied Duty to Commercialize" 1, 2(October 2002) available at <https://ipmall.law.unh.edu/sites/default/files/BAYHDOLE/4_PREPPED_FILES/2002.10.00_Academia_Industry_and_the_BayhDole_Act_An_Implied_Duty_to_Commercialize.pdf>, last seen on 31/1/2020.

³³ Working Group Report on Strengthening Academia Industry Interface (Including Public Private Partnerships) for the XI Five Year Plan(Planning Commission, Government of India) 1, 4 (December 2006), available at <<https://dst.gov.in/sites/default/files/rep-saii.pdf>>, last seen on 31/1/2020.

³⁴ *Supra* note 13 at 39.

and Biotech Limited but the commercialisation could not take off because the research was too embryonic to be commercialised. Later, when the same drug was subsequently licensed to Life care Innovations, it became a huge commercial success. This was due to further R&D carried out by Lifecare Innovations to overcome the dosage related toxicity of Amphotericin-B.³⁵ It was because of this further research that the drug (commercially named as 'Fungisome') could become the least toxic drug available in its category and a commercial success. Such cases show that the availability or non-availability of IPR protection over the embryonic research is largely inconsequential to the company that has to improve the product to make it commercially competitive.

The leitmotif of the draft guidelines is to introduce clarity in the ownership of IP. However, there is no question of uncertainty of ownership of IP in most research institutions in India.³⁶ It is so because all the major academic and research institution have their own IP policy tailor made to suit their needs as they are completely autonomous and already enjoy almost complete discretion to protect and commercialize IP.³⁷ Thus, the draft guidelines are a mere restatement of what is already in practice. Also, what policy makers have ignored is that the scarcity of funds in research is a big predicament in India, where not surprisingly, only 3 percent of domestic R&D expenditure is incurred by universities.³⁸ This stands in stark contrast with the 18 percent of total R&D expenditure incurred by universities in OECD countries.³⁹ Also, there is a significant difference in the quality of research done by different institutions running on public funding. While, CSIR holds the largest number of patents, the number is minute or even nil in the case of most other public-funded institutions in India,⁴⁰ so the issue of commercialisation of their IP is not pertinent. The Bayh-Dole Act model of commercialisation is not a one size fit all policy for all the types of institutions and variance in history, path dependence, and institutional embeddedness make such 'emulation' very difficult.⁴¹ What is needed is the appreciation of underlying structural difference among the higher education system of India from that of developed nations and fine tuning the guidelines to our needs.

³⁵ K. Mehra, Technology Transfer, S&T Structure, Infrastructure and Public Space, National Institution of Science, Technology and Development Studies (2008) available at <<https://nistads.res.in/all-html/Technology%20Transfer.html>>, last seen on 31/1/2020.

³⁶ Mrinalini Kochupillai, "The Protection and Utilization of Public Funded Intellectual Property Bill, 2008: A Critique in the Light of India's Innovation Environment", 15(1)Journal of Intellectual Property Rights 19, 22 (2009).

³⁷ *Ibid.*

³⁸ *World Bank: Unleashing India's Innovation: Toward Sustainable and Inclusive Growth*, edited by Mark A. Dutz, (The World Bank, 1818 H Street, NW Washington, DC 20433, USA) 31 (2007).

³⁹ *Id.* at 31, 32.

⁴⁰ *Supra* note 36 at 23.

⁴¹ D.C. Mowery and B.N. Sampat, "The Bayh-Dole Act of 1980 and University-Industry Technology Transfer: A Model for Other OECD Governments?" 30(1/2)Journal of Technology Transfer 115, 116(2005).

D. A TRAGEDY OF THE ANTI-COMMONS

Another argument on our part for the non-implementation of the guidelines is that the adoption of these draft guidelines would result in the tragedy of the anti-commons. The concept of 'the tragedy of anti-commons' stands for the phenomena of underutilisation of resources that takes place when people are given the right to exclude others from making use of a single property by conferring exclusive proprietary over the property.⁴² The tragedy of anti-commons is a paradox. While private ownership usually increases wealth, too much ownership has just the diametrically opposite effect: it wrecks the market and impedes innovation.⁴³ The phenomena has application in public-funded research as most inventions are 'embryonic' in nature, that is to say, further research is needed to make them marketable. In a case study done by Colyvas of inventions licensed by Columbia and Stanford University, it was found that most of the cases fell in the category of 'embryonic' inventions, although some of them were ready to use technologies.⁴⁴ The case study covered fundamental techniques, biotechnology research tools, biological processes, medical devices and software programs. It would be a preposterous assumption to have that in India the conditions are any different because had it been so, the industry would have already teamed up with academic institution to produce inventions just waiting to be sold in the market.

If such foundational research is protected and not made available in the public domain to everyone seeking to develop the technology, this would lead to impeding innovation. Protection of embryonic research would force every perspective developer of alternate or better technology which is available in the market, to negotiate with the academic institution or much worse, the exclusive licensee who currently holds the market. The guidelines would give rise to a patent thicket which would in turn act as a barricade and everybody will lose in this hidden tragedy of anti-commons. 'Hidden' because underuse of emerging technologies is often difficult to spot. For example, who can tell when dozens of patent owners are obstructing the development of a promising line of drug research?

Survey data from the American Association for the Advancement of Science has shown that many researchers have been forced to modify or abandon

⁴² Gary Pulsinelli, "Share and Share Alike: Increasing Access to Government-Funded Invention Under the Bayh-Dole Act", 7(2) *Minnesota Journal of Law, Science & Technology* 393, 415(2006), available at <<https://scholarship.law.umn.edu/cgi/viewcontent.cgi?article=1298&context=mjlst>>, last seen on 31/1/2020.

⁴³ M. Heller, "The Tragedy of Anticommons", available at <<http://wealthofthecommons.org/essay/tragedy-anticommons>>, last seen on 31/1/2020.

⁴⁴ J. Colyvas, M. Crow, A. Gelijs, R. Mazzoleni, R.R. Nelson, N. Rosenberg, and B.N. Sampat, "How Do University Inventions Get into Practice?", 48(1) *Management Science* 61, 62 (2020).

research altogether due to patent barriers.⁴⁵ Mazzoleni theoretically modeled R&D Competition and tried to explore the implications of 'open access' versus 'university patenting' in terms of social welfare. In consonance with our argument, he concluded that under the 'university patenting', the equilibrium number of firms engaged in the development of embryonic research is clearly less than the optimal level.⁴⁶

E. A WEAPON OF DOUBLE TAXATION

Another principle fallacy in the guidelines is that it would lead to the phenomenon of double paying or double taxation of taxpayers. It means that the public has to pay for the research twice. Once while funding the research activity that resulted in the invention, and then again when paying a supra-competitive price that the industry charges usually using their monopolistic position as exclusive license holders.⁴⁷ Although the draft guidelines suggest that to the extent possible exclusive licensing should be avoided, it still allows the institution to give exclusive license if it deems it necessary.⁴⁸ Therefore, it leaves the fate of the nature of licensing up to the negotiations between the institution and the license seeker. Such circumstances can lead to innovation going out of the hands of the public which actually financed it.

A prominent real-life example of double taxation is the 'fuzeon treatment' for the Human Immunodeficiency Virus ('HIV'). The treatment was made by research using public funds in the Duke University and the University of California. However, it was later licensed to Swiss private pharmaceutical 'Roche' which priced the drug at 22,000 USD. The pricing acted as prohibitive for patients in the US to access the treatment who being the tax payers had funded the initial research in the first place.⁴⁹ The draft guidelines effectively change the nature of the academic institutions from that of an institution with a goal to achieve the interest of the masses to that of a private R&D lab serving the interest of private players and aimed at amassing wealth.

F. THE EXECUTIVE WAY

As already stated, an identical attempt was made by the government of India in the year 2008 when it submitted the Protection and Utilisation of Public Funded Intellectual Property Bill for the parliamentary scrutiny. The said

⁴⁵ K. Nair and B. Nair, "Protection and Utilisation of Public Funded Intellectual Property Bill 2008— A Critical Analysis of the Indian Bayh-Dole Act", 2(4) NUJS Law Review 697, 707 (2009).

⁴⁶ R. Mazzoleni, "The Effects of University Patenting and Licensing on Downstream R&D Investment and Social Welfare", 31(4) Journal of Technology Transfer 431-441, 435 (2006).

⁴⁷ *Supra* note 42, at 411.

⁴⁸ *Supra* note 3, at 11.

⁴⁹ *Supra* note 45, at 708.

Bill could not make it beyond legislative scrutiny and was handed back to the government with suggestions. It seems like the government in 2019, to bypass the democratic gaze, has chosen to enact the same measure vide executive instructions. The Standing Committee too opined that an enabling legislation was a better option in comparison to executive instructions to bring about such a fundamental change in a vast number of institutes.⁵⁰ It also made suggestions against blind patenting of all IP created as, all of them may not be potent enough to be converted into a product, thus becoming a liability.⁵¹

The Standing Committee warned against the ‘unfounded assertions’ of the capacity of the 2008 Bill to make universities self-reliant. ‘Unfounded’ because in its scrutiny, it was found that even under the best situation, the institutions will be able to generate only five per cent of the grant received from the government in ten years’ time.⁵² The Standing Committee pointed out that the government cannot absolve itself from the responsibility towards universities and research institutions. And thus recommended the removal of the said objective, but the ‘financial self-sustenance goals’ still find a place on page number 4 of the guidelines.⁵³ The same suggestion to nullify the ill effect of the step has been thrown out of the window. The Standing Committee’s suggestion to incorporate a provision for reviewing the operation of the license at regular interval has also not been heeded to which would have provided an effective instrument to keep dormant licenses and unreasonable prices in check. In all, in drafting the guidelines, the important suggestions by the Standing Committee have been ignored, while also ensuring that this time the attempt does not fall under the legislative gaze.

IV. CONCLUSION

In this article, we ventured to scrutinise the underlying philosophy and the structural framework of the draft guidelines which have been drafted to effectuate a research-oriented coalition between the academia and the industry in India. In the process, we did a detailed review of the drafting history of draft guidelines in the country which kicked off in 2008. Also, we attempted to draw lessons from the role and impact of the Bayh-Dole Act in making the United States of America a global innovation leader. Our findings indicate that heavy or exclusive reliance on patents as a channel of technology transfer to industry developed by public-funded research does not promote innovation, creativity, or efficient commercial exploitation. Instead, it has the potential to have deleterious reverberations by significantly inhibiting them. Furthermore, what adds to the list of the perils is the total absence of any attempt by drafters to address the shortcomings pointed out by critics of similar legislative materials which are in force in other jurisdictions. In our view, the concept needs further ‘indianisation’ to be in conformity with our institutional and R&D scenario which significantly differ from other

countries. This can only be achieved by engaging in widespread consultation with all the major stakeholders, especially academia.