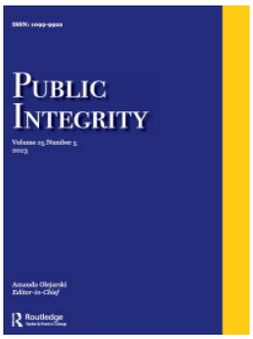

Public Integrity

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/mpin20

Impartiality at the Patent Office

Benedicto Acosta

To cite this article: Benedicto Acosta (20 Oct 2023): Impartiality at the Patent Office, Public Integrity, DOI: 10.1080/10999922.2023.2268810

To link to this article: https://doi.org/10.1080/10999922.2023.2268810

Published online: 20 Oct 2023.

PUBLIC INTEGRITY
https://doi.org/10.1080/10999922.2023.2268810

Taylor & Francis
Taylor & Francis Group

Impartiality at the Patent Office

Benedicto Acosta

Universidad de Salamanca

ABSTRACT

Social contract is one of the most common schemes for justifying patents. According to this theory, inventors obtain a commercial exclusivity in exchange for the disclosure of the invention, with the final aim of allowing others to use that knowledge in future innovations. Under the rationale of this social contract theory of patents, if a patent system is not guided by impartiality in its decisions, the relation between disclosure of inventions and future innovation becomes an issue, because non-merit factors in patent examination influence the quality of the knowledge disclosed. The aim of this article is to analyse impartiality in patent systems and, by doing so, defend that there is an epistemic side on both impartiality and social contract theory.

KEYWORDS

Impartiality; patents; innovation; values

The "social contract of patents" (or *grand bargain*, or *quid pro quo* thesis) is one of the most common arguments called upon when justifying patents and giving them a regulatory framework. According to this argument, patents would be the result of a bargain between their holders and the State, where the latter confers, for a limited period, exclusivity to the holder in exchange for the disclosure of the invention (Ghosh, 2004). One of the final aims of this scheme would be stimulating future technological innovation through knowledge disclosure (Nordhaus, 1969).

A common thread among patent codes is that patentability requirements are related to the quality of inventions, and that any factor other than merit, like the nationality or gender of the inventor, does not matter when granting or denying patents. The reason why impartial examiners are required is not only that the bargain commits the State to avoid inequalities or arbitrariness, but rather because poor quality inventions do not generate innovations.

The aim of this article is to analyse and problematize impartiality in patent systems and, by doing so, defend that the social contract of patents is not just a moral or normative framework, because it also implies epistemic issues. Under the rationale of social contract theory of patents, not being guided by impartiality can contribute to a scenario in which the disclosure of inventions does not promote innovation.[1]

The study of impartiality in governance has benefited greatly from the literature on public administration. The idea of "administrative neutrality" is founded on this notion that public officials should not be swayed by political or personal prejudices, but rather should base their choices on impartial standards (Wilson, 1887; Schafer, 2019).

Another interesting contribution of public administration literature to impartiality has been the development of "public value theory," which emphasizes that public administrators should focus on creating value for the public rather than serving the interests of specific groups or individuals. This approach tries to help ensuring impartiality, by urging bureaucrats to make decisions that are in the best interests of the society (Bryson et al., 2014). At the same time, scholars

CONTACT Benedicto Acosta bneacosta@usal.es Universidad de Salamanca, Salamanca, Spain.

have also contributed with the notion of "public service ethics" which suggest that they should adhere to ethical principles such as honesty, responsibility and accountability in order to realistically ensure impartiality (Rohr, 1998).

These approaches exemplify the interest of public administrators in the issue, and more generally in the relationship between bureaucrats and the rest of society. But there have been hardly any contributions regarding the particular case of patents.

However, if we think about it carefully, patent examiners are precisely bureaucrats, and patents are nothing more than public policies, which engage and influence society. Few studies have examined the role of impartiality in patent systems (perhaps just Doran & Webster, 2019; Barber & Diestre, 2022, both indirectly), and never before have their *epistemic* implications been examined within this social contract scheme. I contribute in this way to the research on impartiality in patent systems that has been carried out so far, which is, of course, also discussed in the paper. I specifically address some obstacles and pressures that may affect examiners' impartiality, factors that can also influence the positive performance of these professionals and the quality of patent systems.

The paper is structured as follows. First, I begin by presenting my analytical framework. I will define the concept of "impartiality," and then demonstrate its epistemic relevance by connecting it to the social contract. Second, I present my methodology. Afterwards, I will show the results of the conducted interviews and document analysis. I will discuss the influence of patent attorneys, companies and individuals. Likewise, I will delve into the topics of protectionism and gender biases. I conclude by highlighting some final remarks.

Analytical framework

Impartiality

Inspired by the usual legal definition, impartiality can be understood as "not showing support for any of the sides involved in an argument" (Cambridge University Press, n.d.). This implies acting according to criteria related to the object under consideration (in the case of the examiners, the patent document) and never according to the stakeholders or to personal opinion. What has been defined in this way occasionally appears in the literature as "disinterestedness" and even as "objectivity" (Jollimore, 2021). Some philosophers have analysed the epistemic side or value of impartiality (Koster & de Regt, 2020, p. 126), even by considering it an epistemic virtue (Montmarquet, 1987, p. 484). In any case, the important point is that, according to the rationale of the *quid pro quo*, impartiality seems to be a characteristic that, once possessed, helps to achieve the epistemic goal of innovation.

We can find an interest in impartiality in classical theories of bureaucracy and public administration, such as the one proposed by Max Weber. As it is well known, Weber describes bureaucracy as an activity that, although emanates from the rules given by a political activity, should not be elected by the political class (Weber, 1978, pp. 956–958). This important feature, the independence of bureaucrats, is complemented by the fact that it is usually a lifelong or, at least, a secure job. The emergence of this modern form of bureaucracy, not dependent on the appointment of a boss, is superior to "all collegiate, honorific, and avocational forms of administration," according to Weber (1978, p. 973).

Values play a decisive role within this framework, because the bureaucrat "does not establish a relationship to a person (…) but rather is devoted to impersonal purposes" (Weber, 1978, p. 959). These purposes frequently gain an ideological halo from what he calls "cultural values," like those of the "Nation, Church, Party or Enterprise" (ibidem). When these values appear and, instead of complementing, they replace the sense of obedience to public service, problems concerning the adequate performance of the task assigned to the bureaucrat arise.

Impartiality and the social contract: Its epistemic relevance

In the case of a patent examiner, acting in obedience to the public service implies recognizing the social good that is obtained through patents, namely the disclosure of the invention, which is offered in exchange for the protection of the use of the invention by a commercial exclusivity. In fact, some statements of the interviewees were in line with this exchange between society and inventors: "We guarantee that the invention that goes on the market benefits both the work of the inventor and society" (Interview 3). Or, as another examiner points out: "We are a public service and our function is not only the processing… but *especially* the dissemination of information" (Interview 6). This idea is known as the "social contract of patents," as we already mentioned in the introduction, and is sometimes also called the "grand bargain" or "quid pro quo."

The idea of the Social Contract has been widely developed since the moment it was firstly proposed in a modern fashion by Grotius and then by Hobbes (Skinner, 1978). These discussions have not only been diverse, but they have also aimed at different objectives. Nevertheless, the social contract has worked in most cases as a way of justifying the existence of political institutions, like the State, or the supranational organizations.

In the mid-20th century the idea of a social contract that could vindicate other institutions like science and technology made its appearance. Vannevar Bush (1945) popularized the idea of science as an "endless frontier" activity, which could infinitely benefit citizens and improve their well-being (while receiving an adequate funding in the process).

In many social contracts there are certain commitments to the creation of values (such as the promotion of epistemic values). Justifying science, for example, as an endeavour that benefits society, or defending that human precariousness forces us to recognize some political institutions, are not just ways of justifying the ideal existence of some institutions, but also ways of stating the typical values of science or human nature.

But how exactly is this possible? How could impartiality be clearly related to the social contract? Probably the following words from Doran and Webster are the clearest: "If there are substantial non-merit-based factors in the decision to grant a patent, and if the legal right, per se, has a notable commercial effect, *then a patent system is unlikely to be achieving its pro-innovation potential*" (Doran & Webster, 2019, p. 39; italics are mine).

To put it in other words: the reason why certain obstacles or pressures that can affect impartiality are outlined here is that such condition seems relevant to explain patents as a social bargain that enables achieving epistemic success; i.e., innovation. In fact, the condition of impartiality is required by legislations (Constitución Española, 1978; Library of Congress, 1934),[2] not only because it compels states to save other commitments, like equal opportunities or non-discrimination, but also for being fundamentally oriented towards innovation.

Methodology

In order to present my ideas, I mainly rely on information gathered from twelve in-depth interviews held with examiners from the Spanish Patent and Trademark Office (OEPM). The reason for choosing an interview as the method is primarily due to the limitations of quantitative analysis in patents, which are particularly pressing when looking for information to write about impartiality and patents.

Interviews with the examiners were conducted face-to-face in October 2021, with prior informed consent, and were finally transcribed. The study group was selected based on three criteria: gender equality (seven women and five men), examiners' work experience ranging from 2 to 25 years, and representation of all technological areas (general mechanics, applied mechanics,

electrical and chemical, the four areas in which they currently divide their staff) within the Office.

The interview questions were open-ended, allowing individuals to freely express themselves. However, here are some of the main and central examples:

- How does an examiner obtain the applications to be examined?
- How are they distributed within the Patent Office?
- Are more complex or more advanced foreign applications sent to a particular type of examiner?
- What type of relationship exists between the examiner and the patent agent/attorney?
- How is the professional relationship between the examiner and the private sector?
- Which characteristics does an examiner have to possess in order to be considered a prestigious professional?

Once the data were collected and the interviews were transcribed, the themes were built. In this article I have opted for combining results and discussion, another common practice in qualitative research (Walker, 1997), because I believe it enhances the article's readability.

Patent attorneys, companies and individuals

In the following lines I will try to mainly present the problem of the influence of patent attorneys, but I will also point out a series of constraints and obstacles related to impartiality that have so far gone unnoticed. When possible, some studies that have linked innovation and impartiality, like in the relationship between examiners and patent attorneys, are cited below.

Patent attorneys are the professionals in charge of advising inventors and, in many cases, also drafting their applications. The work they carry out requires occasional personal contact with the examiners, which is why efforts have been made in recent years to describe, and also measure, the influence they exert on them. An article by de Rassenfosse et al. (2018) clearly reports on the American case. In it, the quality of these agents is measured by the success rate of the patents granted within all those that are requested, and then compared with the quality of the inventions, namely, the success rate of that technology to obtain patents in other countries; so, it is observed that a good patent attorney is even more linked to success than a good quality patent (de Rassenfosse et al., 2018, p. 11).

In Spain, patent attorneys are notified by the Official Industrial Property Bulletin (*Boletín Oficial de la Propiedad Industrial*) and, in principle, once attorneys have prepared their responses, these are sent in writing to the examiners for their consideration. Most of the interviewees believe that the role of the attorney helps the examiner to better polish possible flaws throughout the entire process, but others pointed out that the relationship by correspondence slows down their interest in improving the application.

Although attorneys and examiners are not obliged to have personal contact, the Office, and especially the EPO, prepare courses to promote more fluid communication between these two stakeholders of the patent system. In fact, Spanish examiners regularly receive calls from these attorneys, in addition to formal responses, and even attend personal meetings. One interviewee commented, "the names sound familiar to you … , this one is from Pons (company), this one is … this is whoever … because they are always the same" (Interview 8).

Knowing the examiners personally, although "it does not influence the [granting] decision … because nothing can be done behind the scenes, since the system is highly regulated … dealing with the examiner can get things done sooner" (Interview 7). And this speed is quite important, because the inventor is looking for the patent application to be resolved as soon as possible, in a

context where the workload of the examiners is increasing, sometimes leaving the inventors defenceless.

The question, therefore, is not only that "we are all individuals," or that "nobody is a robot," answers that were repeated in the conversations and that indeed suggest that many are not free of external influences, but that other factors also play a part. Although the examiners consider the arguments of the attorneys, all the interviewees agree that their work is "very subjective," since evaluating the novelty or the commercial application of inventions that are not physically implemented in the Office but rather described on paper can lead skilled attorneys to realize that "sometimes changing a few little things saves the application" (Interview 1).

A few examiners also revealed a paradoxical circumstance: attorneys charge their clients for processing applications, but at the same time, the slower the process is and the more documents they have to deliver, the more money they receive. An interviewee said she had the feeling that they "are interested in continuing … going through as many procedures as possible, of paperwork, to earn more money" (Interview 6). Another person takes the situation personally: "This is beyond me … because they have charged this person when … it seems that the intern has done it" (Interview 5), meaning that attorneys sometimes charge their clients for unnecessary fixes or for poor quality applications. And one last examiner comments on the matter: "and they can sell it better to clients … the fact of knowing the examiners" (Interview 8). Thus, this fiduciary purpose can be even related to the recognition of the personal link between the examiner and the patent attorney.

An unexplored point, not mentioned by the literature, regarding the impartiality of examiners is the opposite of the latter. Namely, the unequal consideration between individuals and applicants represented by attorneys. In some conversations it was possible to detect a complacent attitude towards the unrepresented, in terms of advice and help, although its extension and its effect on patent systems remains to be seen.[3] An examiner confirms that "we always have a good relationship with both the attorneys and when the application is submitted by an individual, always. And what's more, if they are unrepresented, *even more so*, because they are supposed to have less training and need more help" (Interview 4). This "even more so" means that examiners should occasionally complement the job of the attorneys, or even substituting it. The relevance for the social contract of patents is great, since the supposedly "impartial" role of the examiner is affected by another condition (which is, by the way, epistemic), namely the lack of expertise of inventors to adapt their inventions to the format required by patent laws.

When asked about the characteristics they believed an examiner should have to be considered a prestigious professional, another person replied that "it is important to be quite impartial, because in the end if you feel sorry for someone you do not do your job well" (Interview 12), so this demonstrates that it is a tendence they could feel during their work. It remains to be seen the concrete attitude they adopt in each case, and which are the conditionings factors.

A related perspective is raised by those who might think that granting patents to individuals is different from granting patents to companies. This seems to be another unexplored situation. With individuals it sometimes happens "that [the patent] becomes a document that the person is going to put on the wall of his or her house, something to be excited about, but that industrially and commercially will not have an outlet. In those cases, sometimes, well … We are going to stop thinking about it and we are going to solve this, even if it is not in the most perfect way" (Interview 7). And this means that they offer such assistance because they do not fear that the patents of individuals will be opposed or litigated, since they are simply "papers to hang on the wall."

These attitudes towards companies, individuals and applicants with agents should continue to be examined, as they seem to have a clear relation to the social contract, innovation and impartiality. One could argue, at this point, that a bias towards the more powerful corporate inventors (at the expense of individuals) could well lead to more innovation, because these corporations

possess more opportunities for exploiting the inventions in actual technologies. I would answer that disclosure, rather than exploitation, is the idea at the core of the grand bargain proposal. This means that, even if individuals or small businesses do not exploit their inventions in the same way corporations do, they also produce knowledge, and it can be argued that the technological and commercial information they make public is an essential part of the innovation process—as is the case with the direct exploitation, at least if we stick to the rationale of the *quid pro quo*.

Be that as it may, according to Tabakovic and Wollmann (2018), there are certain "revolving doors" at the USPTO that would allow patent examiners to become employed by some companies. Companies would be more willing to consider employing examiners who grant "significantly" more patents.

An interviewee used this same expression in one of the conversations: "here there is this revolving door[4] thing: people who have worked at the Office leave as attorneys and vice versa" (Interview 5). However, from what certain officials of the Office commented in an informal meeting, the willingness of Spanish examiners to change jobs is not very common. This is one of the many cases in which employment policy and the culture of intellectual property differentiate national patent systems. For example, in the USA, examiners tend to stay less time as examiners, since the employment situation is more contractual than civil servant in nature, compared to Europe, and also because the relationship with the private sector is more strained (cf. Eckert & Langinier, 2014; Lai, 2017).

Working conditions have much to do with the development of undesirable and corrupt practices (McCourt, 2013). This was already visible for Max Weber, and there are some passages where he writes, *avant la lettre*, about "revolving doors" between the public administration and the private sector. According to Weber, there are certain regulations, such as those concerning life tenure, by which the ruler tries to protect himself against the loss of control of the civil servant. This is why, let's return to Weber's statement, modern bureaucracy is superior to "collegiate, honorific" forms of bureaucracy, but also to purely "avocational forms of administration."[5]

With regard to this broader question of whether, in general, the impartiality of the examiners can be affected by some kind of constraint, the answers were as suggestive as these previous ones. Although no one said they felt pressured to grant or not grant a patent, they did say they may have a feeling of "not having treated applicants well" (Interview 2) due to a "pressure" that examiners sometimes feel related to deadlines and schedules.

However, one examiner was quick to clarify that if there is no direct pressure from industrial lobbies, it is simply because the industry of Spain does not allow it: "In the EPO I think they have more problems" (Interview 3), because there are many "important companies (in this organization)," the examiner added. This can be linked to the idiosyncrasy of the national offices of the continent, in which the civil servant model is dominant, and, therefore, the sense of public duty prevails, as opposed to the structure of the EPO, which operates outside the States, with its own statute and financing, almost like a private company (Drahos, 2010).

Another person, who confirms that there is no direct pressure from industry, does find an obstacle to her impartiality in a very interesting point: "subjectively, the examiner, and inadvertently, pays more attention to applications submitted by large companies. An individual is not going to present allegations here… And with a strong pharmaceutical company, unintentionally… you pay a little more attention. I've ever thought about it, I mean, maybe it should be anonymous at the time it reaches us… We have computed the time allocated for each file, more or less, but you always move hours from one place to another in the schedule and, and this is something that I have sometimes questioned myself" (Interview 8). These concerns, although very important in their own right, can also be related to the different treatment given to companies and individuals we commented on above, because this makes sense in light of the hypothesis

we have pointed out throughout the chapter, according to which examiners are particularly afraid of oppositions and litigations.

In addition to all these cases, many other examples that call into question the social contract in relation to impartiality can be given. For example, some recent works claim that political uncertainty (therefore, of the States) can also affect the amount of information (especially commercial) that companies disclose (Amore, 2020). We will point out only two more issues which are important to consider: protectionism and gender bias.

Protectionism and gender bias

While the detection of inequality between foreigners and nationals in accessing a patent system, such as gender gaps and biases, falls within the realm of issues that require validation through quantitative analysis, interviews can also be highly valuable. Thus, interviews are not only useful to identify new questions but also shed light on the values that can be affected in the race for innovation.

According to some recent research conducted by Webster et al. (2014) on the cases of European and Japanese patents, inventors from the respective places have a higher probability of obtaining a patent compared to foreigners. This advantage for national inventors becomes even more pronounced in the areas of technological specialization of the aforementioned regions. This has tended to be interpreted as a form of economic protectionism. de Rassenfosse and Hosseini (2020) study the case of the United States and find that foreign applications are ten percent less likely to be accepted by the Office than those of national origin. However, the authors of this study fail to detect voluntary discrimination from examiners and, even less, an *ad hoc* strategy of the Office.

A possible alternative explanation offered by de Rassenfosse and Hosseini (2020, p. 31) does not focus on the role of the examiner. Instead, it suggests that foreign inventors delegate their applications to less proficient patent attorneys, who possess fewer skills to finally obtain the patents. In this case, there would be a direct relationship with the previous chapter, in which we talked about patent attorneys. However, there is also the possibility that the most complex inventions—for example, those coming from strategic foreign sectors—were assigned to the most experienced examiners of the Office, who are supposed to possess a deeper understanding of the subject matter and better and would be more critical of the novelty of their invention.

At this stage, our results rule out this possibility. All examiners interviewed denied the possibility that complex applications were assessed by people with more knowledge or experience, and also added that this had never happened to them or to anyone else in the Office, which seems to be a practice the OEPM has not adopted. Moreover, some strive to point out that it is impossible to know, *a priori*, which applications are going to be more complicated. In fact, both experienced examiners and newcomers to the Office reported they were receiving very complex and more simple applications alike, always depending on their technical field: "the head of service distributes the applications to the examiners who seem to be knowledgeable in the technical field in question" (Interview 7), but taking into account, at the same time, "the workload we have to deal with" (Interview 8). Even so, it remains to be determined empirically whether foreigners are at a disadvantage compared to Spaniards when it comes to obtaining their patents at the Office and whether, if that is the case, such discrimination occurs deliberately by means other than redirection to the most qualified examiners.

This designation can be related to the social contract, as far as it seems artificial or tricky, and because it may not happen to national inventors. This would be an exception to the usual "raffle" of applications among the examiners of an area of knowledge (cf. Righi & Simcoe, 2019), which is also a pillar of this model of impartiality presented by the social contract of patents and which requires specific regulations.

But here we can tentatively propose a hypothesis that is related to the previous chapter: if patent agents/patent attorneys exert influence over examiners, then there may be a predisposition to favour nationals, since most of these professionals represent national inventors in the Spanish Office.

A final case in this vein that could problematize the rationale proposed by the social contract theory has to do with gaps but, above all, with possible gender biases.

Gender has been addressed as a topic by classical authors, contrary to what might initially seem. Max Weber began his study by pointing out that "equality before the law and the demand for legal guarantees against arbitrariness demand a formal and rational objectivity of administration" (1978, p. 979), such as those proposed by laws—like patent codes, but also in other internal regulations and action protocols. However, he readily lends himself to clarifying the issue, acknowledging that if "an 'ethos' takes hold of the masses on some individual question … (it) will unavoidably collide with the formalism" (1978, p. 980). And there is no doubt that women have been, and continue to be largely, deprived not only of moral, but also technical, inventive, agency.

Biases are usually understood as alterations in the selection of data or evidence in favour of one element over another (Gender bias, n.d). The existing bibliography generally highlights the fact that there are fewer women in engineering as the reason why they produce fewer inventions (Hunt et al., 2013). However, data seem to suggest there are gaps not only regarding the participation of women, but also their productivity, although causes related to education, industry or motherhood are still usually used to explain this bias (cf. Whittington & Smith-Doerr, 2005). This is why scholars have recently being looking for gender biases as well.

To illustrate the occurrence bias among patent examiners, it is appropriate to cite a pioneering article by Jensen et al. (2018), which specifically addresses the situation of examiners in the United States. The experiment proposed by these authors is very clear. The study aims to analyse the possible gender gap existing between patents granted to women with names easily associated with a particular gender, such as the name Mary, in comparison to data related to more ambiguous names, such as Jameire or Kunnath. In the first case, the most recognizable names used by females had an 8.2% chance of being rejected, while applications made by women with less common names, which examiners may have believed were male, had only a 2.8% rejection rate (2018, p. 309). This percentage is closer to the rate usually associated with applications made by men, which leads to the conclusion that U.S. examiners can be biased when analysing the applications received.

A recurring solution in feminist studies involves making up for these biases with the incorporation and participation of women within the Office staff. The last data concerning the gender of Spanish patent examiners was published in the "Annual Activities Report" of 2017; however, it has not been updated on the OEPM website since then. The statistics presented therein only provided the total number of women, without specifying the department to which they belonged (whether trademarks, patents, utility models …). On asking the OEPM directly, we learned that, as of January 2022, the majority (approximately 57%) of workers were women. In particular, women are a majority in trademark registration and in the legal affairs of the Office, but the percentage seems to be decreasing in patents.

But even in the case women are incorporated, it is not clear that gender problems would not persist. For this reason, the study of gender biases in the patent codes (the tool that is applied by examiners) deserves a final mention.

Dan Burk (2008), for example, has studied how the PHOSITA[6] requirement intends to appear, in laws and jurisprudence, as an objective requirement of the invention, detached from any epistemological and axiological burden. Jessica Lai has added that, according to that PHOSITA standard, the application is also contrasted with a state of the art which does not recognize that

women have traditionally invented in non-commercial areas, since these were the only spaces in which they have been allowed to operate (Lai, 2021, p. 8).

Regarding the patentability requirements, something can be said about Spain. In the case of this country, there has been no substantive examination to patent until recently, with the actual code (Ley 24/2015, de Patentes, 62765, 2015). Since patents were granted without substantive examination, trusting in the novelty declared by the authors was the key for the granting. It can be hypothesized that, in those countries without substantive and, therefore, strict technical examination, the perception that the "credible" inventions are those made up by men may had influence.

Another requirement, not just formal, but related to the objects that cannot be patented, would also be revealing certain biases; for example, therapeutic treatment methods, or certain forms of care, which are not patentable in almost any legislation (since they are considered "abstract methods"). Lai has highlighted that these non-patentable treatment methods are numerous precisely in highly feminized fields such psychology, psychiatry, nursing and social work (Lai, 2021, p. 10).

And the same would apply to many other requirements, such as those that define the criteria individuals must meet to be considered an inventor. According to Burk, women would only be recognised as those who "simply" contribute with manual work or with their body (2008, p. 194). Patent law would not be interested in the communal nature of the invention; rather, it would primarily focus on profitability, thus favouring the small number of people considered, ultimately, the figureheads of the invention.

The limited presence of female within patent systems (as inventors or as examiners) is an obstacle for economic and scientific development. Women represent a human capital potential that is underutilized. Therefore, it is currently a goal pursued to identify disciplines and sectors with a major lack of female participation. The relevance is, therefore, linked to inventions and patent examiners. Both of these processes can be not just socially or morally, but *epistemically* improved, if women are able to join on an equal footing with men.

Conclusions and final remarks

Because this approach is relatively new for public administration scholars, some questions need to be answered. Firstly, I should say that cases presented here describe problems that could be explained much more extensively and in greater depth. Consider this research as a tentative note of the potential problems that the *quid pro quo* idea could entail on several fronts, especially from the perspective of qualitative research. In each case, limits, challenges or open research lines have been presented.

I have concluded that the pact entrusted to the State, consisting in the disclosure of quality inventions, is therefore called into question. This have been shown in the case examiners displaying unequal treatment towards individual applicants and businesses, or between applicants represented by agents and individual applicants. If bias can affect the inventions to which patents are granted, depending on whether they are presented by women or foreigners, this issue can also arise. Similarly, in the context of patent attorneys, it is worth noting that, while its importance may not outweigh patent quality, as suggested by de Rassenfosse et al. (2018), one finding that does emerge (validated by the results of the interviews) is that the relevance of the mediation exercised by these professionals influences, *in some way*, the examiners. They can be persuaded by attorneys' personality, and by their eloquence, characteristics that are not inherent to the application itself (which, according to the contract thesis, should be the only source of legitimate decision for the examiner).

Let us bear in mind that the different constraints and obstacles outlined here are rather understood as challenges for future quantitative research, in line with the results that can be expected from the interview research (cf. Morse & Field, 1995). Nevertheless, it can legitimately be

concluded that *impartiality is an epistemic issue*, and precisely because of that is a key for explaining the relation between the social contract of patents and innovation.

One of the most prominent historians of patent systems, Kara Swanson, once said that "the role of the patent bureaucrats has been defined as negotiators of the bargain, from a position of neutral scientific and technical expertise that allows them to work neither for the inventor nor for the public (despite their government paycheck), but as mediators between them" (Swanson, 2020, p. 47). And this is certainly an interpretation of the role examiners might have within the contractarian scheme. Perhaps by recognising the role that partiality has in their expertise, and particularly considering its epistemic relevance, we might claim that examiners work *at the same time* for both inventors and the State. This is why I believe there exists a tension with the principle of impartiality. A tension that should be resolved.[7]

Weber was one of the first who recognised, perhaps when noticing these same situations, an intrinsic tendency in modern bureaucracy towards a more "plutocratic and collegial administration." I shall emphasize the urgency of new studies, not just focused on patent systems, but rather about the relationship between impartiality, bureaucracy, and scientific institutions, encompassing both a theoretical and an empirical perspective. Public administrators can promote further research on patent regimes, especially as areas in which different stakeholders deploy and respond to public resources, public policies and societal concerns.

Notes

1. Since both granted patents and rejected applications are usually published, lack of impartiality affects situations in which States do publish technological information, but in a way that does not promote innovations.
2. A clear reference to the examiners in this vein appears in the European Patent Office's Guidelines for Examination: "(they) may not take part in the decision on a case: (i) in which they may have any personal interest (partiality for subjective reasons) or (ii) in respect of which the party may have good reasons to suspect partiality (partiality for objective reasons)" (European Patent Office, 2022, Part E, Chapter XI).
3. Above all, it would be opportune to relate them to the quality of the patent systems. We can hypothesize that the behaviour of these examiners affects the overall quality of patent systems, as evidenced by the existence of low-quality patents or patents that are never exploited in some systems. This leads to fewer repercussions than expected.
4. In Spanish, "puertas giratorias," which is the literal translation of the expression.
5. This comes without prejudice to the importance of vocation and duty. Furthermore, independence from political power is also a crucial feature (as pointed out by Wilson, 1887).
6. Literally, "Person Having Ordinary Skill in the Art," the legal fiction that stablishes the reference for determining whether an invention is obvious or not.
7. Many scholars have recently undermined the possibilities of impartiality by emphasizing the importance of deliberation, stakeholder involvement (Triantafillou, 2015) and citizen participation (Schmidthuber et al., 2019) in all phases of the policymaking process. These proposals must find their way in patent systems as well.

Acknowledgments

This project has been funded with support from the Spanish Government (FPU Program. Reference: FPU19/03734). It has also received funding from the research project "Los condicionantes del cambio tecnológico en España, 1950–2000: formación e investigación" (Grant number: PID2021-128653NB-I00), by the Spanish Ministry of Science. I would also like to thank Ana Cuevas, Santiago M. López, Mar Cebrián, Bralind Kiri, Mariano Martín-Villuendas and the Spanish Patents and Trademark Office.

Ethics approval and consent to participate

Informed consent was obtained from all individual participants included in the study. Approval was granted by the Ethics Committee of University of Salamanca (25/03/2021. No 588).

Disclosure statement

No potential conflict of interest was reported by the author(s).

ORCID

Benedicto Acosta http://orcid.org/0000-0003-0878-0657

References

Amore, M. D. (2020). Innovation disclosure in times of uncertainty. *Journal of Economics & Management Strategy*, *29*(4), 792–815. https://doi.org/10.1111/jems.12390

Barber, B., & Diestre, L. (2022). Can firms avoid tough patent examiners through examiner-shopping? Strategic timing of citations in USPTO patent applications. *Strategic Management Journal*, *43*(9), 1854–1871. https://doi.org/10.1002/smj.3386

Bryson, J. M., Crosby, B. C., & Bloomberg, L. (2014). Public Value Governance: Moving Beyond Traditional Public Administration and the New Public Management. *Public Administration Review*, *74*(4), 445–456. https://doi.org/10.1111/puar.12238

Burk, D. L. (2008). The Role of Patent Law in Knowledge Codification. *Berkeley Technology Law Journal*, *23*(3), 1009–1034.

Bush, V. (1945). *Science, the Endless Frontier*. United States Government Printing Office.

Cambridge University Press. (n.d). Impartially. Cambridge dictionary. https://dictionary.cambridge.org/dictionary/english/impartially?topic=unbiased-or-impartial

Constitución Española. (1978). *Boletín Oficial del Estado*. https://www.boe.es/eli/es/c/1978/12/27/(1)

de Rassenfosse, G., & Hosseini, R. (2020). Discrimination against foreigners in the U.S. patent system. *Journal of International Business Policy*, *3*(4), 349–366. https://doi.org/10.1057/s42214-020-00058-6

de Rassenfosse, G., Jensen, P. H., Julius, T., Palangkaraya, A., Webster, E. M. (2018). *Is the patent system a level playing field? The effect of patent attorney firms*. SSRN Electronic Journal. https://ssrn.com/abstract=3254958

Doran, P., & Webster, E. (2019). Who influences USPTO patent examiners? *World Patent Information*, *56*, 39–42. https://doi.org/10.1016/j.wpi.2019.01.005

Drahos, P. (2010). *The Global Governance of Knowledge. Patent Offices and their Clients*. Cambridge University Press.

Eckert, A., & Langinier, C. (2014). A Survey of the Economics of Patent Systems and Procedures. *Journal of Economic Surveys*, *28*(5), 996–1015. https://doi.org/10.1111/joes.12034

European Patent Office. (2022). *Guidelines for examination*. Retrieved September 02, 2023, from https://link.epo.org/web/epo_guidelines_for_examination_2022_hyperlinked_en.pdf

Gender bias. (n.d). In *European Institute for Gender Equality Glossary*. Retrieved January 02, 2022, from https://eige.europa.eu/thesaurus/terms/1155?lang=en

Ghosh, S. (2004). Patents and the Regulatory State: Rethinking the Patent Bargain Metaphor After Eldred. *Berkeley Technology Law Journal*, *19*(4), 1315–1388.

Hunt, J., Garant, J. P., Herman, H., & Munroe, D. J. (2013). Why are women underrepresented amongst patentees? *Research Policy*, *42*(4), 831–843. https://doi.org/10.1016/j.respol.2012.11.004

Jensen, K., Kovács, B., & Sorenson, O. (2018). Gender differences in obtaining and maintaining patent rights. *Nature Biotechnology*, *36*(4), 307–309. https://doi.org/10.1038/nbt.4120

Jollimore, T. (2021). Impartiality. In E. N. Zalta (Ed.), The Stanford Encyclopedia of Philosophy. https://plato.stanford.edu/cgi-bin/encyclopedia/archinfo.cgi?entry=impartiality

Koster, E., & de Regt, H. W. (2020). Science and Values in Undergraduate Education. *Science & Education*, *29*(1), 123–143. https://doi.org/10.1007/s11191-019-00093-7

Lai, J. C. (2017). The changing function of patents: a reversion to privileges? *Legal Studies*, *37*(4), 807–837. https://doi.org/10.1111/lest.12176

Lai, J. C. (2021). The Role of Patents as a Gendered Chameleon. *Social & Legal Studies*, *30*(2), 203–229. https://doi.org/10.1177/0964663920916237

Ley 24/2015, de Patentes, 62765 (2015). https://www.boe.es/buscar/doc.php?id=BOE-A-2015-8328

McCourt, W. (2013). *Models of public service reform: A problem-solving approach*. SSRN Electronic Journal. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2258956

Montmarquet, J. A. (1987). Epistemic Virtue. *Mind*, *XCVI*(384), 482–497. https://doi.org/10.1093/mind/XCVI.384.482

Morse, J. M., & Field, P.-A. (1995). *Qualitative research methods for health professionals*. Sage Publications.

Nordhaus, W. D. (1969). An Economic Theory of Technological Change. *The American Economic Review*, *59*(2), 18–28.

Rohr, J. (1998). *Public Service, Ethics & Constitutional Practice*. Lawrence Kansas University Press.
Righi, C., & Simcoe, T. (2019). Patent examiner specialization. *Research Policy*, *48*(1), 137–148. https://doi.org/10.1016/j.respol.2018.08.003
Schafer, J. G. (2019). A systematic review of the public administration literature to identify how to increase public engagement and participation with local governance. *Journal of Public Affairs*, *19*(2), e1873. https://doi.org/10.1002/pa.1873
Schmidthuber, L., Piller, F., Bogers, M., & Hilgers, D. (2019). Citizen participation in public administration: investigating open government for social innovation. *R&D Management*, *49*(3), 343–355. https://doi.org/10.1111/radm.12365
Skinner, Q. (1978). *The Foundations of Modern Political Thought. Volume 2. The Age of Reformation*. Cambridge University Press.
Swanson, K. (2020). *The administration of genius: Expertise and the patent bargain*. SSRN Electronic Journal. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3607907
Tabakovic, H., Wollmann, T. G. (2018). *From revolving doors to regulatory capture? Evidence from patent examiners*. SSRN Electronic Journal. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3185893
Triantafillou, P. (2015). The Political Implications of Performance Management and Evidence-Based Policymaking. *The American Review of Public Administration*, *45*(2), 167–181. https://doi.org/10.1177/0275074013483872
Library of Congress (1934). United States Code: Patents, 35. §§ 31-88. https://www.loc.gov/item/uscode1934-001035002/
Walker, D. H. T. (1997). Choosing an appropriate research methodology. *Construction Management and Economics*, *15*(2), 149–159. https://doi.org/10.1080/01446199700000003
Weber, M. (1978). *Economy and Society: An Outline of Interpretive Sociology*. University of California Press.
Webster, E., Jensen, P. H., & Palangkaraya, A. (2014). Patent examination outcomes and the national treatment principle. *The RAND Journal of Economics*, *45*(2), 449–469. https://doi.org/10.1111/1756-2171.12053
Whittington, K. B., & Smith-Doerr, L. (2005). Gender and commercial science: Women's patenting in the life sciences. *The Journal of Technology Transfer*, *30*(4), 355–370. https://doi.org/10.1007/s10961-005-2581-5
Wilson, W. (1887). The Study of Administration. *Political Science Quarterly*, *2*(2), 197–222. https://doi.org/10.2307/2139277