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Institutional Imaginaries of Publics in Stem Cell Banking: The Cases of the UK and Spain

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ABSTRACT *The UK and Spanish Stem Cell Banks hold politically controversial—but potentially therapeutically beneficial—human embryonic stem cells for distribution to research laboratories globally. The UK bank was the first of its type in the world, opening in 2004, and the Spanish bank used it as a role model in its own development. Both banks structure their operations in response to how their staffs imagine the publics in their nation make trust judgements about their work. Differences between the workings of each bank can be traced to differences in the collective imaginings operating at each bank—termed ‘institutional imaginaries’—about how publics think. The UK bank sustains an imaginary in which distance lends legitimacy and disengagement signifies correct moral practice. It conjures a public that values a steady, safe and reliable institution—free from potential conflict of interest—about which the less news the better. This stands in contrast to the Spanish bank that conjures a public that retains an interest in legitimate, ethical guardianship of stem cell material, but which is less worried about conflict of interest in attaining this. Instead, for the Spanish institution, engagement with science and the media through the projection of the bank as cutting edge is deemed crucial for maintaining public support.*

KEY WORDS: Publics, stem cell banks, UK, Spain, imaginaries

Introduction

The last 10 years have seen the emergence of a number of stem cell banks across the world. Their formations differ, but their general purpose is to assemble deposits

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of human embryonic, adult and induced pluripotency stem cells, to test these deposits for purity and sterility, and to distribute these materials to research laboratories.¹ These activities are important for two reasons. First, they are intended to address the high profile ethical controversies about the sourcing of human embryonic stem cells that inherently involve the destruction of embryos (Holm, 2002). Second, they are intended to supply high quality material to biomedical researchers facilitating the development of new therapeutic advances in disease management. Both are publicly important issues. In this article we focus on two banks: the first to be established—the UK Stem Cell Bank—and its counterpart in Spain.

The UK Stem Cell Bank was established in 2002 and opened in 2004. It was endorsed by the House of Lords' Stem Cell Research Select Committee (2002) that advocated that the bank should have a steer on ethical debates around human embryonic stem cell (hESC) lines. It was anticipated that by providing a centralised location for the storage and distribution of hESC lines the bank would lessen the numbers of embryos destroyed by enabling a number of researchers to work with material from any one donation.

The profile and success of the UK Stem Cell Bank has fostered the emergence of a range of related human embryonic stem cell banks across the globe. Nevertheless, there is great diversity in their cultural contexts and in how these different banks operate. A working group—the International Stem Cell Banking Initiative (ISCBI)—exists to encourage the sharing of best practice and it endeavours to harmonise ethical and technical standards (Isasi and Knoppers, 2009; Stephens *et al.*, 2011b; Hammond-Browning and Stephens, 2013). Institutions involved are from North America, Europe and Asia and they exhibit wide diversity in practice, including public and private funding and distributing different types of cells, which are deposited through different procedures.



Inside the UK Stem Cell Bank: human embryonic stem cell lines are stored for international distribution.

In contrast to this diversity, the two banks we focus on here, those in the UK and in Spain, have much in common. Both are based in European democracies with relatively permissive regulatory environments for hESC research (Elstner *et al.*, 2009). In this respect they are in contrast with those of Germany or Italy, for example, where hESC research is heavily restricted, or India, where researchers are free from the regulative scrutiny experienced by British and Spanish researchers (Bharawaj and Glasner, 2009). Both banks are publicly funded, non-profit organisations, opened since 2004 as repositories for human embryonic and adult stem cells. As a result of the Spanish bank modelling itself on the UK bank, both institutions have ethical oversight steering committees operating above the laboratory organisational structure. From a broader perspective, both institutions are regarded as drivers and symbols of their nation's world-leading science portfolios.

In this article we ask how the form and activities undertaken by these banks are shaped by their assumptions about how the publics in their countries form trust judgements about scientific issues. How do the banks model publics and their concerns? How do they see themselves as publicly accountable? What different patterns arise in the two national cases? How can these differences be explained? We argue that, while the Spanish Stem Cell Bank has adopted the UK banking model, the local political and social context in Spain resulted in distinctive configurations of their accountability practices that differ from those in the UK. We develop the analytical perspective of Jasanoff and Kim (2009) in describing these banks as holding institutional sociotechnical imaginaries of the publics with which they operate.

We base this argument upon our empirical work undertaken during a three-year ethnographic study of the UK Stem Cell Bank conducted in 2005–2008 (Stephens *et al.*, 2008a, 2008b, 2011a, 2011b, 2012; Stacey and Stephens, 2012; Stephens, 2012). The project involved 36 interviews with the UK Stem Cell Bank staff and steering committee members and two fieldtrips to the Spanish Stem Cell Bank in Granada, Barcelona and Madrid. The interviews were conducted in 2007, so the value of this article derives from its analytical account, rather than from the up-to-the-minuteness of the institutional description. Interviews were conducted in English by Neil Stephens, a British-born, native English speaker. Interviewees were offered personal anonymity in publication—in as much as this is achievable—to protect the full range of individuals working at each institution.

In what follows we will contrast the banks' organisational structures and use extracts from our interviews with the banks' employees to probe the ways in which each bank's institutional imaginary of the public frames their operations.

Analytical Perspectives: Institutional Imaginaries of Publics

A productive analytical perspective for discussing the work of the banks considered here has been developed by Sheila Jasanoff and Sang-Hyun Kim. They

develop the concept of ‘sociotechnical imaginary’, defined as ‘collectively imagined forms of social life and social order reflected in the design and fulfilment of nation-specific scientific and/or technological projects’ (Jasanoff and Kim, 2009, p. 120). This concept acknowledges the constitutive role of the capacity to imagine futures in scientific, social and political activity, whereby ‘technoscientific imaginaries are simultaneously also “social imaginaries”, encoding collective visions of the good society’ (Jasanoff and Kim, 2009, p. 123). The concept is specifically orientated towards making comparisons between countries to provide nuanced analysis of national variations in technology policies.

However, in this paper we offer a more focused analysis as befits our empirical material. Our analysis compares ethnographic reports from two institutions—the UK and Spanish stem cell banks. Hence, instead of invoking national sociotechnical imaginaries, we describe the institutional sociotechnical imaginaries, hereafter institutional imaginaries, enacted in each bank. These are the collectively imagined forms of social life and social order reflected in the design and realisation of institutionally based scientific projects—in this case, stem cell banking. The collectives forming these imaginaries are those working with and within these institutions. This contrasts with Jasanoff and Kim’s focus on entire nation states and nation state building. The focus here is on what the institutions are intending to achieve, the mechanisms deemed appropriate to do so, and how these mechanisms are put into place. This allows us to describe institutions as articulations of particular institutional imaginaries.

Our focus is on the form taken by the institutional imaginaries of publics enacted at each bank. We explore how our ethnographic data about the operations of each bank reveal mechanisms shaped by how the staff at each bank imagines publics within their own country. We identify instances in which assumptions about how publics make trust judgements about scientific endeavour influence each bank’s practice and institutional form. In this regard the paper is not directly about Spanish and UK publics themselves, but about how they are imagined within the banks and what difference this imagination makes.

Jasanoff and Kim’s (2009) work on imaginaries has already been deployed in a number of other research projects. Their own empirical work develops an account of the US and South Korean national imaginaries around nuclear energy, as ‘atoms for peace’ and ‘atoms for development’, respectively, that frame sociotechnical activity and public response in each nation. Bouzarovski and Bassin (2011) also reflect upon energy through a focus on the Putinist imaginary around global Russian hydrocarbon supremacy. They highlight the entanglement of discursive and material aspects of the hydrocarbon landscape within a particular vision of national identity. Felt and Müller (2011) note the relatedness of sociotechnical imaginaries to ‘technopolitical cultures’ through their analysis of patient sense-making of genetic testing in dealing with hereditary forms of breast and ovarian cancer in Austria. This analysis is expanded to include organ donation in Austria, France and the Netherlands (Felt *et al.*, 2010) and skin donation in Austria (Felt *et al.*, 2009).

The theme of genetic counselling is also employed by Rommetveit (2011) who analyses the ‘enhancement imaginary’ constructed in Western discourses about genetic information flows, identifying them as moving from a ‘social imaginary’ (Taylor, 2004) to a ‘sociotechnical imaginary’—implying a new-found institutional and technoscientific capacity from the 1970s onwards.

In work similar to the research presented in this article, Pickersgill (2011) extends Jasanoff and Kim’s work to explore sociotechnical imaginaries in more micro-social processes. His analysis is of an emerging imaginary around neuroscience and the law with a particular focus on free-will and detecting deception. He explores visions of technological development and social order that emerge through the discourses of individuals and transnational collectives rather than nation states. Except for the articles by Jasanoff and Kim (2009) and Bouzarovski and Bassin (2011), all of these studies shift the emphasis away from national sociotechnical imaginaries to those conjured by patients, academic communities or constellations of the two. We make a similar move by focusing on the institutional imaginaries of the stem cell banks we researched. However, unlike the various other projects discussed here, our analysis highlights how publics are imagined within these micro-social institutions.

Empirical Analysis: Organisational Structures of the Stem Cell Banks

The UK Stem Cell Bank

UK Stem Cell Bank representatives always make it clear that their bank has two parts. The first is the laboratory space housed at a biological standards agency—the National Institute for Biological Standards and Control (NIBSC)—that conducts the day-to-day work of banking, testing and distributing stem cells. The second is the ‘steering committee’: the ethical oversight group that judges the suitability of each deposit and accession at the bank, as well as overseeing the bank’s remit. The two parts are designed as separate, with no crossover of role, location or personnel. Indeed, the individuals making up the steering committee are strangers to the majority of laboratory staff. The director of the bank is not a member of the steering committee, and, at first, was not even allowed to attend their meetings, as a member of the committee’s secretariat explained:

There needs to be a separation between the operation of the bank and the oversight of the bank. But then, the bank needs to know what the oversight says and whether it is implementable. So a slight change when I took over was that the people from the bank were not in attendance in the committee. I couldn’t see why . . . so they’re present throughout the meeting now.

Once the director of the bank started attending steering committee meetings, our ethnographic observation confirmed that he maintained his role as distinct from

that of the members of the steering committee. The following account provided by the director of the UK bank confirms this:

We are certainly not in any way critical to, or even contributory to, the decisions on the ethical nature of the materials that come into the bank. We are purely there to comment on the technical and operational issues that may relate to a new cell line coming into the bank . . . we'll respond to specific questions, not all of the questions but some . . . but that is advisory to the steering committee.

This approach is intended to demonstrate the bank's legitimacy. The rationale is to prevent conflict of interest so that decisions about the UK Stem Cell Bank are not made by those who work there, as it was considered that this could compromise their decisions (Steering Committee, 2004). Such practices and structures are not unusual in UK bio-political decision making, including in the structure of science regulatory and funding bodies that also engage with the bank (Jones and Salter, 2003; Jasanoff, 2005).

The steering committee membership—which includes those formally privileged with decision-making powers—consists of an interdisciplinary group of life scientists, ethicists, social scientists, clinicians and 'lay representatives', the latter usually being members of patient groups. All are unpaid. This is intended to ensure transparency and democracy, with the various groups, who represent diverse interests, both scrutinising and informing the decision-making process (Stephens *et al.*, 2008b, 2011a, 2011b).

Concern to prevent conflict of interest is evident in the *Code of Practice for the Use of Human Stem Cell Lines* produced by the bank's steering committee:

The bank has been located in an independent national institution to avoid potential conflict of interest. It will not receive or store human embryos and will not conduct discovery research on the banked stem cell lines; the staff may however, pursue research aimed at improving banking processes and procedures. (Steering Committee for the UK Stem Cell Bank and For the Use of Stem Cell Lines, 2005, p. 9)

The bank's own *Code of Practice*, a related document also produced by the steering committee, outlines a similar mode of operation:

[T]he bank would need to be sited in an independent national laboratory to avoid the potential conflicts of interest that would occur if the bank were placed in an academic lab engaged in full time stem cell research (Steering Committee for the UK Stem Cell Bank and For the Use of Stem Cell Lines, 2004, p. 12).

By prohibiting research and derivation, all of the material held in the bank must come from elsewhere and then be deposited in the bank. In this way the very physicality of the bank performs legitimate practice (Stephens *et al.*, 2008a; Stephens, 2012). Both of these provisions stop the bank from competing with the laboratories that deposit or access material stored in their premises. Such competition, it is believed, would compromise the legitimacy of the bank as a guardian of stem cell material. As we will demonstrate below, the institutional imaginary of the public mobilised in Spanish stem cell banking configures these issues in a quite different way.

The Spanish Stem Cell Bank

The Spanish bank modelled itself on the UK bank, with its staff making visits to learn about UK practice, and producing a declaration of intent to support subsequent collaboration and training (Banco de líneas celulares de Andalucía, 2004). However, the UK format was adapted to suit the Spanish context. The first and most notable adaptation resulted from Spain's political system of autonomous regions. There are 17 of these and two autonomous cities, established following the *fiebre autonómica* (autonomy fever) during the closing stages of Franco's dictatorship (Hooper, 2006). Today each autonomy has political and administrative control over aspects of bioscience regulation and funding. The Spanish Stem Cell Bank is located in four different autonomous regions, with three laboratory 'nodes' and one administrative centre. The lead node in Granada, capital city of the autonomous region of Andalusia, was developed specifically to host stem cell banking activity. The remaining two nodes are in Barcelona and Valencia, in the autonomous regions of Catalonia and Valencia, respectively. These are hosted by laboratories which were already working in IVF and regenerative medicine. The administrative work of the bank is conducted in Madrid, the centre of Spanish government and the location for the bank's steering committee.

In 2007—when the research presented here was undertaken—the three nodes worked to store hESC material for wider distribution within and beyond Spain. However, in contrast to the UK bank, the Spanish nodes are intended to be research active, as is evident in the Granada node's medium to long-term aims recorded in a document titled, *Andalusia: The Place to be for Stem Cell Research*:

1. To have in place a strong and competitive network of national and international stem cell researches.
2. To become an international hub for stem cell research efforts.
3. To translate basic research results into industrial and/or therapeutic applications.

4. To make a huge impact in the multidisciplinary fields other than regenerative medicine such as embryology, drug screening and oncology (Bancelan, n.d., p. 8, typographical error in original).

All of these aims contravene the rules adopted in the UK context. Furthermore, the Spanish nodes are also allowed to derive hESC lines themselves, meaning that they take donations of ethically sourced human embryos and destroy them in order to extract stem cells. The Valencia and Barcelona nodes have done so since early in the bank's development. Indeed, staff at the Granada node have conducted socio-legal research into techniques for making the estimated 100,000 frozen IVF embryos in Spanish IVF clinics available for hESC derivation (Cortes *et al.*, 2007). During a visit to the node, bank staff were preparing to house significant quantities of these frozen embryos within their storage space so they could proceed with in-house derivation imminently. Such involvement in increasing the supply of embryos to stem cell research would be unthinkable at the UK bank. It would not demonstrate distance between those who make ethical decisions and those who act upon them and it would put the bank into competition with other laboratories. However, in Spain, as we demonstrate further below, the bank's institutional imaginary is of a public keen to see scientific engagement and Spanish leadership. Given this, it was seen to be appropriate for the Spanish bank to derive their own lines as an articulation of a cutting-edge stem cell science portfolio.

The Spanish bank adopted and modified a number of the UK laboratory practices. More importantly in our context, they also introduced alterations to the UK model for the steering committee. In 2007, Spain had a smaller steering committee, consisting of eight people: two external life scientists, three representatives of the Carlos III Institute (a chair, the secretariat and a bioethicist), and the three node directors. The Carlos III Institute is the closest equivalent in Spain to the National Institutes for Health in the USA or to the research section of the Department of Health in the UK. It is the central government's chief funding body and regulator of scientific research in Spain (Raya and Belmonte, 2009).

If we applied the standards used in the UK model to the Spanish system, six of these eight members—the three node directors and the three Carlos III Institute representatives—would be denied membership because of potential conflict of interest. This form of reasoning did not transfer to the Spanish context, as the excerpt from a group interview with three members of the Spanish Stem Cell Bank Steering Committee—the bioethicist, the secretariat and the director of the Granada node—discussing why the UK director is not allowed to be a full member of the steering committee, indicates:

Secretariat: It's not an ethical problem because there are many other people on the committee.

Granada Node Director: The UK style, for me, it's like the director of the UK

Stem Cell Bank is becoming a technician, [but] he should make a decision about these things, right. That's why he's the director of the UK Stem Cell Bank.

Interviewer: He makes decisions about how to make things happen on a day-to-day basis, but the long-term strategy is something where he influences the discussion but is to be decided at steering committee level. That's the system that they use.

Secretariat: Yeah. But I don't understand why he cannot be involved in the decisions.

This quotation, and the different institutional arrangements they suggest, articulate different institutional imaginaries of the public. In the UK bank imaginary the public would not trust these outlined arrangements as they do not instantiate distance. At the Spanish bank such concerns do not resonate and such safeguards are deemed unnecessary. Similar observations about the lower profile of conflict of interest issues have also been reported in the regulation of pre-implantation genetic testing in Spain compared to the UK (Pavone and Arias, 2011). It is not that the Spanish steering committee has no concept of conflict of interest and imagines a public unconcerned with this issue. Later in the interview quoted above they deployed the notion of conflict of interest to explain why the director of any node cannot pass judgement on the ethical provenance of a hESC line derived in their own laboratory without support from the rest of the steering committee. However, their conception of interest is bounded differently, as expressed by the Spanish committee member's clear bemusement at the UK director's reduced role. In Spain the bank articulates a different imaginary of the public, with different values resulting in different practice.

We should note that the different constitution of the steering committee is, in part, due to the existence of a second committee in Spain: the Commission on Guarantees concerning the Donation and Use of Human Tissues and Cells. This body is charged with reconciling strategic stem cell research interests with ethical and legal concerns (Raya and Belmonte, 2009). This commission has 12 members representing scientists, bioethicists and legal practitioners housed at the Carlos III Institute. While this second committee does take on some of the remit of the UK Stem Cell Bank Steering Committee, the broader institutional arrangements of funding and location mean that there is less emphasis on conflicts of interest than would be the case in the UK. The institutional imaginary of the public is different, resulting in different institutional articulations by each bank.

Empirical Analysis: Media Profiles and the Stem Cell Banks

We now move on to analyse transcripts from our interviews with the director of the UK Stem Cell Bank, the director of the lead Granada node of the Spanish Stem Cell Bank, and the director of the Barcelona node about media interactions.

All three manage the day-to-day laboratory work of stem cell banking and each is a figurehead for their institution. All three attend their steering-committee meetings, although the Spanish directors are full committee members with decision-making powers, while the UK director is not.

The three interviews quoted below were conducted at the respective banks in 2007 and they provided a snapshot of banking practices in both countries at that time.² Italics have been added to highlight sections that are pertinent to the analysis.

Director of the UK Stem Cell Bank

The institutional imaginary of the public sustained by the UK bank is evident in this unfolding account provided by the bank's director:

Interviewer: What kind of press profile would you like the bank to have?

UK Director: The thing that we've attempted to do is to generally be there supporting the science area in the UK and generally trying to emphasise the role of the bank and the strength of the regulatory framework in the UK. Which means that *people can be assured* that there is a *safe professional organisation* involved in the management of the ethically approved lines for ethically approved work. And that they're making sure that that's all *open and above board*. And together with the work of the steering committee that the *public* can take some *confidence* in the fact that the UK has this *strong framework* and the physical bank to provide a facility to supply ethically sourced cell lines.

The image which is projected here is of a public that seeks stability. They are to be assured by professionalism and gain confidence in the openness and the strength of the UK system. The interview continued:

Interviewer: And how about you personally, do you think that you have a press profile or should have a press profile?

UK Director: I think it's been inevitable in the early phases of setting the bank up since I was the only person in the bank. So my personal presentations were quite important and as the director of the bank I still continue to have a certain figurehead role. It's important to make sure I balance that, so that *I am not appearing for external purposes to compete with the researchers for press space*, so I tend to turn down requests for responses on stem cell research. I only respond on things which are relevant for us from the perspectives of the bank's activities: safety and quality issues.

He later reveals that he has around two or three requests on which to comment each month, and that this is 'too many'. This framing of the bank's remit, and the projection of a need for 'balance', expressed in this extract is also evident

in the following account by the director about how the chair of the steering committee relates to the media. However, there are clear differences between these evaluations that relate to the chair's role and political identity beyond the bank. The chair is regarded as an established expert in biomedicine and he has become a public figure in British politics through his membership of the House of Lords:

Well [the Chair of the Steering Committee] is involved in the general debates and they are sort of having to lead it, from the House of Lords primarily. His role of Chair of the Steering Committee is slightly lower key. I think that's sensible because again, *as with the bank, you don't want to be constantly saying, 'Hey we're the steering committee and we're wonderful and you should do everything we say'* because you'll attract some positive press for a brief while but the danger is you'll then attract negative press because I think it's the tendency once something has been put up on a pedestal, the next thing to do for the journalist is to knock it down.

Here the director conjures an image of a public that responds badly to any signs of grandeur or attention seeking. He also presents himself as aware that contact with the public is mediated through the agency of journalists who, if provoked, may portray the bank negatively. It is also significant that, in this excerpt, the director deals with the boundaries between the bank and the formal political system in Britain. He highlights the bank's relationship to established formal political structures as involving both separation and alignment. Hence, he posits that, while the steering committee chair, in his role as a member of the House of Lords, may take the lead in debates about stem cell science, his steering committee role is lower key. It is evident here that he makes assumptions about the appropriate location for explicit political engagement. For him, this is the House of Lords, not the bank or the steering committee. By establishing this demarcation, the director attempts to reconcile politics and banking.

Towards the end of the interview the UK director returned to the issue of replying to media requests, while summarising his position:

I think it wouldn't be helpful for us to constantly respond to everything that comes along, but to try to maintain *a low-level positive awareness in the public* of what we're doing and what the benefits are to what we're doing. So that people just think, 'Oh it's something that happens in the UK and it's not a big deal. It's good. It's positive and there is *no reason to be worried about it*'.

These comments suggest that the director of the UK Stem Cell Bank articulates a particular institutional imaginary of the UK public and of its implication

in the day-to-day operations of the bank. This is an imaginary in which distance lends legitimacy and disengagement constitutes correct moral practice. It involves the bank director presenting himself and the institution as steady, safe and reliable. It means operating with the presumption that ‘less news is good news’. The following sections present contrasting accounts from Spain.

Director of the Granada Node of the Spanish Stem Cell Bank

Like the UK bank, the Spanish bank seeks to satisfy the expectations of its public but it faces different pressures and engages with the media in a different way. The following extracts from an interview with the director of the lead node of the bank in Granada, Andalusia, provide crucial background about the modes of operation at this bank:

So [stem cells] are a very, very important tool. That’s why I’m here. But I don’t believe we are going to cure any disease until at least 2020, 2030. So, if you expect me to go and tell people Andalusia is investing in human embryonic stem cells and this is very key to cure diabetes, then I don’t take the job. Because I am telling something in which I don’t believe . . . *But politicians want people to go to the press every single day telling things like we are going to cure diseases, we are going to cure diabetes . . .* The media always asks what kind of disease are we going to cure and when? The politicians need to make sure that the director they hire, they don’t care whether he’s going to publish or not. But he has to pass what they call in the [United] States the headline test. *He has to give headlines to a newspaper.*

This is a very different narrative from that offered by the UK director, who identified the House of Lords as the correct place for political engagement and demonstrated comfort with this demarcation. In contrast, the Granada director sets politics and the work of the bank in tension. He describes politicians encouraging the bank to engage with their public in particular ways with which he is uncomfortable. The Granada director continued on this theme when he responded to a question about how often the bank is mentioned in newspapers:

More than I would like to! Each time we do something, each time we publish a paper, each time we sign an agreement with a company, each time we hire scientists: press.

Interviewer: So a press release is issued?

Granada Director: Yes, but not by me. By the politicians . . . [They] say ‘Hey; 12 pm next Monday in this building we will be signing an agreement that is going to be *crucial for the health of the Andalusian people*’.

There is 'localness' in play here. While being a global institution, the Granada node is responding to and anticipating the responses of both the local (autonomy) public and the national public. There is, of course, also a 'localness' to the UK bank, although in the UK 'local' is equated with the national. Localness and political culture remains a central theme of the discussion as the following comment illustrates:

Granada Director: [Politicians] keep saying that we need to win the press, to *make people aware of how important this is and make sure we keep funding it*, because if we are not in the press and the public is not aware of what we are doing, people will lose interest and people won't support us, as the [Andalusian] Government of Health, to invest in the stem cell bank. So *we need to keep celebrating things to make sure that the people who are going to vote next month are happy with us investing in the bank.*

This extract is particularly revealing because it highlights the significance of a party political agenda in the Spanish bank's work. In addition, the director offers an articulation of the needs and preferences of an imagined public in which voters can be appeased by the bank 'celebrating things' and demonstrating the continued scientific success of the institution. It conjures a public which wants to see the bank involved in cutting-edge science and successful treatment. However, we can question who has agency in developing the node's institutional imaginary, with clear involvement by politicians encouraging increased press attention.

The director indicates that the level of press attention was temporarily raised as a result of the local election scheduled for 27 May 2007. However, it is clear from the quantity of newspaper coverage he was able to show Neil Stephens from the preceding two years that the normal level is still high compared to that garnered by the UK bank. Both inside and outside of election times, engagement with the media is an important part of stem cell banking life in Granada.

When discussing the forthcoming import of cells from Sweden, the director described another exchange with local politicians calling for further press coverage. In this instance he attributed them as saying '[the Swedish group] are giving [the cells] to us but not the other banks right? . . . It is very important to let people know that those cells came first to Granada'. This account points once again to the role of local publics. While the three Spanish nodes operate together to store hESC material and standardise practice, there is competition for status amongst them. The UK bank is, of course, involved in competition internationally but, at the Spanish bank, there is also intra-national competition. It is clear that the Spanish bank is orientated towards regional audiences in seeking legitimacy and support. In the next section we consider how the Barcelona director continues the discussion of the inter-nodal interactions, giving it a somewhat different texture.

Director of the Barcelona Node of the Spanish Stem Cell Bank

The Barcelona node is housed in an established stem cell and regenerative medicine centre. The Barcelona and Valencia nodes have both derived hESC lines in-house and the director suggests that this is their primary function, with the Granada node operationalising the storage and exchange of tissue between laboratories. Despite the differences between the branches, the director of the Barcelona node maintains a high media profile, as the other members of staff at the bank were keen to emphasise when I interviewed them:

Barcelona Staff Member: [The bank is] in the Spanish newspaper very often because [the Barcelona director] is *always* on the TV, on the radio, in the newspaper. *Normal people in Spain know [the director].*

Nevertheless, the director herself was more modest in her claims about her celebrity when she was interviewed:

Interviewer: How do you relate to the media here? People say that you're in the press quite often.

Barcelona Director: Nah! Who told you that?

Interviewer: Well, everybody.

Barcelona Director: Everybody! Yeah. *Normally it's the media who come to us.* We don't go to the media and tell them I have this. It's the reverse... That's probably due to my background in assisted reproduction and being in the first team that achieved a pregnancy in IVF and so on. I have had very good contact with the media. *I think that the relation with the media is quite important. Because they are the way to get to the society. I mean we have to explain to everybody what we are doing and this is done through the media.*

Interviewer: What kind of message do you want to give through the media to the public?

Barcelona Director: *That in Spain, in Barcelona, we have had the opportunity to set up a centre like this.* Many scientists had come from abroad to be able to work in here. Regenerative medicine is a very promising field... but *we have to be realistic* and tell them what is possible and what is not possible and try to be optimistic but without creating false [hopes].

Like the directors of the UK Stem Cell Bank and the Granada node, the Barcelona director was concerned both to let people know that stem cell science is 'very promising' but also to be 'realistic' about potential outcomes in the field. As in the Granada case, but in contrast to the UK situation, the Barcelona director maintains a high media profile. Nevertheless, there seems to be differences between the strategies of the bank directors in the two Spanish autonomies. The Barcelona director is less troubled by the media and she seems to feel less

pressured to place herself under its scrutiny. She expresses less compulsion to promote both stem cell science and the local autonomous regional bank's success in the area.

The conversation then turned to how the local Catalanian autonomous administration had been initially resistant to the idea of a bank but had subsequently altered their position. When asked about the local administration's motivation to fund the bank, she responded:

It is an emerging field, a new field. And we had the opportunity of getting into that new field very soon. *Spain has not been a country where science has been very successful for many years* because it was not funded and because many scientists went abroad. We started working on it in 2005 when very few places were doing derivations. *I think that the local administration, the politicians in Catalonia, saw that this was a fantastic opportunity to start working with good scientists coming from abroad*; I think that this was the main reason.

Comparison between the above extract and those deriving from the interview with the director of the Granada node demonstrate that they share many views. Both posit scientific advance as crucial in securing public support for their work, with an emphasis on the leading role of Spain, and of the local autonomy, against a backdrop of perceived under-performance. However, the Barcelona director describes a more harmonious relationship with the media and the local authority.

In certain key aspects, the Spanish directors' accounts are framed differently from those of their UK counterpart. As we have suggested, the UK director couches his account in terms of a degree of disengagement, while those from Spain are expressed in terms of a more direct and more overtly political mode of engagement. In that context, the Spanish directors also position themselves more overtly as spokespersons on behalf of stem cell science itself. Therefore, the Spanish banks, as represented through these accounts, display distinctively regional orientations that reflect their understandings of Spain's political and social organisation.

Conclusion

This article addresses how two prominent stem cell banks—those of the UK and of Spain—form institutional imaginaries about the characteristics of the publics to which they are accountable. It also demonstrates how these institutional imaginaries become institutionally articulated, meaning that their ideas about these publics lead to specific institutional forms and practices. This responds to the questions identified in the introduction of the paper: how do the banks model publics and their concerns? How do they see themselves as publicly accountable? What different patterns arise in the two national cases? How can these differences

Table 1. Comparing institutional imaginaries of publics and the activities they engender

	UK Stem Cell Bank	Spanish Stem Cell Bank
Model of the public	Values steady, safe, scientific progress (that is also cutting edge)	Values cutting-edge Spanish stem cell science portfolio (that is also safe)
How the model of the public frames activity	Disengagement: in decision making, in hESC derivation, in conducting research	Engagement: in decision making, in hESC derivation, in conducting research
Steering committee make up	Broad and interdisciplinary, director, funders and government employees role constrained	Smaller, interdisciplinary, directors, funders and government employees fully active members
Research profile	Limited to banking processes	Aspire to be an international centre in banking and stem cell research more broadly
hESC derivation and embryo storage	Banned	Actively pursued
Political involvement in the banks' practices	Implicit, correct political involvement is positioned in the House of Lords and other demarked institutions	Explicit, political interference is set in tension with the work of the Granada node, although less so in Barcelona
Media profile	Limited, unsensational, controlled	High, politically driven, measured but engaged
National stem cell profile	Aspires to be world leading and ethically secure	Aspires to be world leading and ethically secure

be explained? To summarise our empirical analysis we have followed Jasanoff and Kim (2009) in producing a table comparing key issues.

Table 1 summarises the institutional imaginaries of the public demonstrated by each bank and the different institutional arrangements and activities they engender. The structure and modes of operation of each bank are institutional articulations of the particular imaginaries of the public enacted in both contexts. The UK Stem Cell Bank articulates an imaginary in which distance lends legitimacy and disengagement signifies correct moral practice. It conjures a public that values a steady, safe and reliable institution—free from potential conflict of interest—about which the less news the better. This is in contrast to the Spanish Stem Cell Bank that conjures a public that retains an interest in legitimate, ethical guardianship of stem cell material, but which is less worried about conflict of interest in attaining this. Instead, for the Spanish institution, engagement with science and the media through the projection of the bank as cutting edge is deemed crucial for maintaining public support.

These differences are set in a context of significant similarity between the two banks within the diversity of the international sector as a whole. Both are based in relatively similar countries, with similar stem cell regulation. Both are publicly funded symbols of their nation's stem cell portfolio, and both have steering committees. Indeed, as noted previously, the Spanish bank modelled itself on the UK

version. Nevertheless, as Table 1 shows, differences in the political contexts and institutional imaginaries of the banks have led the Spanish group to configure their institution differently.

Our paper develops the work of Jasanoff and Kim (2009) who articulated the concept of ‘sociotechnical imaginary’ in relation to US and South Korean national approaches to nuclear energy. We adapt this analytical framework by moving away from a study of nation states to particular micro-social institutions acting within nation states: the stem cell banks. This allows us to discuss the institutional sociotechnical imaginaries, or simply institutional imaginaries, enacted in the UK and Spanish institutions. We focused on what the institutions intend to achieve, the mechanisms deemed appropriate for doing so, and how these are put in place. In doing so, we can detail how these institutions are articulations of particular institutional imaginaries.

This paper is not an attempt to describe publics; the actual mechanisms by which people in the UK and Spain make trust judgements about scientific issues remain as invisible to us as analysts as they do to the banks themselves. Likewise, we are not suggesting that either one of these systems is better than the other. Instead, we have sought to demonstrate the role of institutional imaginaries of publics in shaping the organisational structures and day-to-day practices of two similar, related organisations. By utilising ethnographic data in this form, our work demonstrates that these publicly funded institutions are structured by, and account for themselves in relation to, imagined publics and inferred public concerns.

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Notes

¹This is distinct from another type of stem-cell banking—cord blood banks—that take donations of cord blood immediately after childbirth for storage either for possible use to meet the child’s future health needs or that of other people. Cord blood banks are not the focus of this paper.

²The interview reported with the UK director was conducted on 24 July 2007, although this is one of many conducted with him during the project; the Granada node director was interviewed on 18 May 2007 and the Barcelona node director on 15 November 2007.

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