Technological Forecasting & Social Change xxx (2015) xxx–xxx

Contents lists available at ScienceDirect

Technological Forecasting & Social Change

The role of academic inbreeding in developing higher education systems: Challenges and possible solutions

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ARTICLE INFO

Article history:
Received 29 November 2014
Received in revised form 23 June 2015
Accepted 27 June 2015
Available online xxxx

Keywords:
Academic inbreeding
Institutional inbreeding
Development of higher education systems
Portugal
Russia

ABSTRACT

This article contributes to the literature on academic inbreeding by analyzing its rational, origins, resilience, and options to limit it in two higher education systems (Russia and Portugal) chosen purposively for having more differences than similarities, while sharing high levels of academic inbreeding. Findings show more homogeneity than heterogeneity with regard to the understanding of academic inbreeding as a social phenomenon, its roots, dynamics and role in developing higher education systems. Academic inbreeding is not defined as completely negative but rather fulfills a developmental role, particularly in the early development of these higher education systems, assuming a more detrimental effect later on. Positive and negative impacts of academic inbreeding are discussed, including factors and motivations that contribute for this practice to persist. Finally, three suggestions to curtail academic inbreeding are forwarded: not ending it by decree, fostering internationalization (especially mobility) and implementing transparent recruitment practices.

1. Introduction

Academic inbreeding has long been seen as detrimental to scholarly activity, scientific output and the fostering of networks (Pelz and Andrews, 1966). It has a negative connotation since the beginning of the last century, and it remains the same today (Elliot, 1908; Inanc and Tuncer, 2011). Nevertheless, high rates of academic inbreeding are found in developing higher education systems (e.g., Malaysia) and in mature higher education systems, particularly in the most research-intensive universities (e.g., Japan) (Horta et al., 2011). The practice is present in distinct geographical regions across the world and in systems with widely different development paths (Tavares et al., 2015; Sanz-Menéndez et al., 2013; Padilla, 2008; Yamanoi, 2005; Bleiklie and Hostaker, 2004; Smolentseva, 2003). The fact that academic inbreeding is present in such a variety of higher education systems with apparently independent systemic characteristics, development stages, paths and other features is of interest to researchers and policymakers alike. It raises the question: what explains the emergence and prevalence of academic inbreeding in higher education systems?

Two issues are inherently associated with this question. The first issue relates to the conceptual dialectic found in the research literature regarding what should be considered as academic inbreeding and what should not (Horta, 2013; Berelson, 1960; Caplow and McGee, 1958). Several definitions of academic inbreeding found in the literature (e.g., Goudechot and Louvet, 2008) offer different meanings leading to altered understandings of the same phenomena and resulting in mixed results when the practice is empirically analyzed (see Horta et al., 2010). The understanding of academic inbreeding as a concept and phenomena is important for higher education researchers,

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http://dx.doi.org/10.1016/j.techfore.2015.06.039
0040-1625/

policymakers, and academics to minimize the "dance in the dark" between researchers themselves, and between the research and policymaking spheres (see Klemperer et al., 2001).

The second issue relates to the benefits and problems raised by academic inbreeding. The empirical literature has been mostly seen academic inbreeding as damaging to academia (Horta et al., 2010; Inanc and Tuncer, 2011), but what are the possible ways to constrain this practice or to limit it to the level where most of what it is drawn from it is beneficial? These are the questions that this article focuses on. Its findings add to the literature on academic inbreeding and aid further reflection on the issue by researchers and policymakers.

The analysis is focused on the higher education systems of two countries: Russia and Portugal. Both have high rates of academic inbreeding (see Tavares et al., 2015; Smolentseva, 2003), but substantial differences in size, structure and development path. The similarity in the incidence of academic inbreeding together with the dissimilarity of the other characteristics offers a methodological sound base to discern the rationale behind academic inbreeding in both higher education systems (see Maxwell, 2004). The different size is particularly important since a recent study associates shifts in academic inbreeding rates to national academic market size and its dynamics (RIHE, 2009).

In both countries, our analysis is informed by semi-structured interviews in person with rectors, vice-rectors, deans and department chairs of several universities. Nationally renowned senior experts in higher education studies and science and technology, current and former high level policymakers, academics and university managers, and accreditation and funding agency directors were also interviewed. The choice for interviewing this group of experts in both countries is based on their experience as academics (all of them were at some time in their careers or are currently academics), knowledge about higher education and science and technology and its evolution, and role as policymakers or with the ability to influence policymaking. The interview procedures followed the guidelines suggested by McCracken (1998) when experts are the focus of the interview.

Interviews were performed until "saturation of knowledge" was achieved (see Bertaux, 1981: 37), that is, when the information provided by the interviews had a recognized pattern derived from ongoing interviews concerning the phenomena being researched. This resulted in 36 interviews taking place in Portugal, and 21 in Russia, a number above the threshold number of 12 interviews recognized as sufficient to reach knowledge saturation (Guest et al., 2006). The saturation of knowledge of the interview results in both country cases also provided a solid indicator relative to the trustworthiness, reliability, and validity of the data (see Elo et al., 2014).

This article is organized as follows: the next section presents a literature review on academic inbreeding. A brief report on the evolution and characteristics of the Russian and Portuguese higher education system precedes the analytical section. In the analytical section, the main findings are presented, discussed and supported by key verbatim quotes from the interviews (see Corden and Sainsbury, 2006). The analysis highlights three analytical focuses: the concept and origins of academic inbreeding in the two systems, the reasons for its prevalence, and the potential solutions to cope with it. The final section draws the conclusions and offers some policy implications.

2. On academic inbreeding

It is not known by whom or when the term academic inbreeding was coined. The etymology of the word inbreeding suggests that it was adapted from biology where it means "to breed from unions between closely related individuals" and "to develop within" (Collins Dictionary).[1] Biology studies mainly indicate inbreeding as harmful to the evolution of species (Futuyma, 1998). The corresponding practice of academic inbreeding has also been denounced as detrimental to scholarship and academia as early as the 1900s (Elliot, 1908). Its roots in biological mating practices make academic inbreeding a socially charged concept; however, it is widely used in academia and policymaking circles to discuss the recruitment practice where universities hire their own graduates to fill academic staff positions (Pezzoni et al., 2009).

However, unlike the biological concept of inbreeding, the concept of academic inbreeding (also known as institutional inbreeding) has often been interpreted in different ways by different scholars. This has led to mixed findings with regard to its effects on academic endeavors (for a detailed discussion, see Horta et al., 2010), making comparative studies on academic inbreeding problematic (Hargens and Farr, 1973; Eells and Cleveland, 1935).

The concept of academic inbreeding ranges from broader to narrower definitions of the concept. In some studies, academic inbreeding is defined as "the practice of hiring former students of an institution as faculty members immediately following graduation" (Smyth and Mishra, 2013: 1). According to this definition, the educational level of the hired academic is not seen as relevant. An undergraduate hired as an academic in the university following his or her graduation is undifferentiated from those that have concluded a master's degree or a doctorate. The use of this broader concept of academic inbreeding is useful in studies focusing on disciplinary fields such as law, where the hiring of academics is not restricted to PhD holders (Smyth and Mishra, 2013) and to higher education systems where the hiring of individuals without PhDs to academic positions is still an ongoing practice. This usually occurs in higher education systems at an early stage of development (Heitor et al., 2014).

In other studies, a narrower definition of academic inbreeding is used. In Europe and North America academic inbreeding has the Alma mater of the PhD degree as the analytical reference while in Asia, the same reference is often the Alma mater of the bachelor degree (e.g., Shin et al, 2014). Although these differences are associated with cultural factors, it is important to consider that the PhD marks the beginning of an academic career and is the most influential socialization period guiding the behaviors of academics (Austin and McDaniels, 2006). This makes the PhD the most appropriate educational level to be considered when analyzing academic inbreeding. This definition of academic inbreeding considers only those academics who become faculty members at the university responsible for awarding their doctorate (Berelson, 1960).

Both broad and narrow definitions of academic inbreeding are acceptable for analytical application with regard to the development stage of higher education systems as long as the idea of academic inbreeding remains grounded on institutional

[1] Collins dictionary: http://www.collinsdictionary.com/dictionary/english/inbreed.

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immobility (Berelson, 1960; Pelz and Andrews, 1966). In this context, some earlier interpretations of academic inbreeding are now considered inadequate because they did not ensure that this principle was adhered to. One such interpretation is the concept of academic inbreeding proposed by Eells and Cleveland who argued that "an individual is considered inbred who is a teaching member of the faculty and who received one or more of his earned degrees from the institution in which he is giving instruction" (1935: 262).

Caplow and McGee (1958) and Berelson (1960) argued strongly that the principle of immobility was not applicable in the case of academics working in the same university where they graduated, if they had taken positions elsewhere after graduating. Academics with this educational/academic career trajectory were termed silver-corded and hypothesized to be scholarly competitive and proficient unlike inbred peers. Recent empirical research has proved this assessment to be accurate, reinforcing the relevance of the principle of institutional immobility as the fundamental basis of the academic inbreeding concept (Horta, 2013).

The practice of universities recruiting their own graduates has long been denounced as being harmful to learning and scholarship throughout the development of higher education systems (Wyer and Conrad, 1984). For decades, scholars have argued that academic inbreeding leads to lower levels of research productivity, visibility and impact. This has been evidenced by recent empirical research, although the subject has also been analyzed in the past with varied levels of methodological sophistication (Wyer and Conrad, 1984; Hargens and Farr, 1973). A recent study of mechanical and aeronautical departments in Turkish technical universities found that the Hirsch index of non-inbred academics was about 89% higher when compared with inbred academics (Inanc and Tuncer, 2011). They also found that a statistically significant negative correlation existed between the percentage of inbred academics and productivity at department level.

Other recent studies, focusing on the Mexican and Portuguese higher education systems, have shown that inbred academics have lower scientific productivity than non-inbred academics (Horta et al., 2010; Horta, 2013). The former of these studies established a causal link between knowledge sourcing that was overly-focused on the institution and the research productivity of inbred academics, confirming the arguments of Pelz and Andrews (1966) that inbred academics published less than their peers because they were less creative, less independent and less connected to the exterior world.

The empirical analyses tend to validate the idea that the recruitment of own graduates fosters the reproduction of knowledge already taught at the university as well as the reinforcement of institutionally accepted routines and practices, consolidating social structures and promoting organizational ossification (Yamanoi, 2005). Own-hired graduates embody skill sets and knowledge that already exist in the university, which they incorporate as legitimate and entrench socially by strengthening internal peer networks to the detriment of any external networking (Pelz and Andrews, 1966). These behaviors are explained through a socialization framed by a narrow institutional framework during the educational and early academic stages (all spent at the same university). This framework replaces a more universal or cosmopolitan mind-set (see Gouldner's work of, 1957 on the latent roles of locals and cosmopolitans in university settings, drawn from Merton's seminal work published in the same year; see Merton, 1957 for one that highlights a narrow institutional assimilation of beliefs, norms and behaviors. These behaviors are sometimes sought by universities to maintain high levels of organizational stability, identity and legitimacy as a study on Japanese higher education recently shown (Horta et al., 2011).

3. The context: two very different higher education systems both sharing high rates of academic inbreeding

The Russian and Portuguese higher education systems have very different development paths and defining characteristics. For Russia, see Smolentseva (2003) and Androushchak et al. (2013); for Portugal, see Neave and Amaral (2012). Both systems, however, are known for high rates of academic inbreeding (Yudkevich and Sivak, 2012; Smolentseva, 2003; Horta, 2013).

3.1. The Russian higher education system

The Russian higher education system has experienced a number of changes since 1992, mostly caused by the end of the state-planned economy. These changes include the emergence of private education, a rise in tertiary education enrollment, and an increased quality differential across universities. The state's real control over many aspects of university performance has waned, leaving the function of external control unfilled. However, despite major institutional transformation since the collapse of the Soviet Union, the present system still has many characteristics and systemic restrictions from the Soviet past.

According to data from the Russian Statistical Agency, there are currently 1115 higher education institutions in the Russian higher education system (653 public institutions) with about seven million students in total. The aggregate academic body is represented by 324,800 people at public institutions of higher education and 32,000 in the private sector. On the whole, public universities are very heterogeneous in Russia, some of them renowned for high scholarly quality. The private sector is associated with low quality education in general. Higher education institutions receive public funding based on the number of students. Fundamental research is nearly always carried out by Academies of Sciences that are funded directly by the government to perform basic research (unlike most universities).

Low academic mobility is the norm. Data from the 2012 Change in Academic Profession (CAP) survey regarding Russia show that the large majority of respondents were employed in the same university over their entire academic career (only 10% have been employed in two or more institutions since gaining a higher degree). Among junior academics, only 5% have been employed by two or more institutions. According to MEMO 2012,[2] among senior academics 53% have worked at a single institution during their entire academic career (though some of them have also worked at other institutions). In private universities, the rate of academic inbreeding is below 10%, reflecting the fact that private universities almost never employ full-time faculty members and usually attract faculty from public

[2] See: Monitoring of Education Markets and Organizations http://memo.hse.ru/en/.

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universities in part-time positions or pay-per-hour contracts. Most private institutions do not offer doctoral degrees (Sivak and Yudkevich, forthcoming). Data from the 2012 CAP survey also show no difference in the percentage of faculty inbreeding across different types of institutions (e.g. national research universities, federal universities, and other institutions).

3.2. The Portuguese higher education system

The Portuguese higher education system developed rapidly after several decades of an authoritarian regime that purposely neglected investment in education and science (Horta, 2010). Entry to the European Union in the 1980s enabled a strong push towards the internationalization of Portuguese science and higher education, not only through Portugal's adherence to international scientific organizations such as CERN, but also by increased participation in European Framework programmes. More recently, growing investment in science and technology has further bolstered qualifications of research and academic staff, leading to greater productivity in international scientific peer review publications and increased internationalization. The country entered a brain-gain situation by the end of 2010 with regard to the number of doctorates awarded by Portuguese universities (Heitor et al., 2014).

A number of statistics provide a good example of the evolution of the higher education system during the past decades. The number of students enrolled in higher education increased from around 30,000 students in the 1960s to more than 403,000 students in 2011.[3] The number of doctorates awarded by Portuguese universities increased from 292 in the 1970s, to 1247 in the 1980s, to 2007 in the 2012 indicating the growing capacity of Portuguese universities to offer doctorates. This is linked to an improvement in academic qualifications among the academic staff. In the last decade, the number of PhD holders at public universities grew from 48% in 2002 to 69% in 2012.

The number of international publications per million inhabitants grew from 350 in 2001 to 954 in 2011, which also indicates a greater ability to carry out high quality research. Moreover, the internationalization of Portuguese universities has been fostered by public policies, whose impact is well documented (Patrício, 2010). Nevertheless, the country still reports high rates of academic inbreeding; a recent OECD (2007: 146) report comments that Portuguese universities are "too academic and inward looking, resulting in a high degree of insularity and inbreeding". In this context, Tavares et al. (2015) calculated the academic inbreeding rate at four universities in Portugal as high as 73%, although more visible in the two oldest universities under analysis (matching the expected arguments of Horta et al., 2011).

4. Analysis: pros, cons, issues, and potential ways to deal with academic inbreeding

4.1. Understandings of academic inbreeding: the experts' perspective

Analysis of our interviews indicates that the concept of academic inbreeding is generally understood as harmful for academia, but that the practice itself is not seen as completely negative. Rather, the role of academic inbreeding is broadly understood as having a relatively negative effect; its role is transformative as science, technology and higher education systems evolve. The Russian and Portuguese interviewees assumed it to be inevitable and even a rational choice, particularly where scientific and higher education systems are in the process of building knowledge capacity or where academic job markets are not open and developed.

> "*Academic inbreeding is mostly, but not always, negative (…) it may have had a key role in the founding of scientific and higher education institutions, as it helped to consolidate the concept of 'school' and gave cohesion at an initial stage, where the existence of these institutions was fragile and they were trying hard to develop their research focus.*"
> [Portuguese expert, former policymaker, currently research institute director]

> "*If academic inbreeding is only about hiring those from the same university just because they are from there without regarding quality criteria, it will be relatively bad. However, if those hired in-house are excellent, then [there is] no problem. The issue is to maintain this equilibrium.*"
> [Portuguese expert, current policymaker]

> "*…we are accused of so called "teaching incest". Unlike foreign universities (…) we do not have any other way. We prepare our faculty on our own. In that way, it is incest. For some reason it is considered as a bad practice, as a stagnation of blood. Probably, this is correct, but do we have any other way? If it was really possible to conduct a competition and afterwards choose from hundreds of applicants, we would rather do that. However, it is impossible in our country. Economic, financial conditions of the university's life do not allow doing it now. Therefore, it has to be forgotten; if we follow that route, we will have no teachers.*"
> [Russian expert, vice-rector at state medical academy]

There was a general agreement that the most negative aspect of academic inbreeding was that it hampered the cross-fertilization of ideas while fomenting parochialism. In other words, it reinforced the ideas that were popular in the university where one studied and later developed one's career. In addition, it was argued that inbreeding was related to recruitment practices that emphasize institutional identity and strong personal, professional and academic ties in preference to assumed or potentially higher levels of quality. The interviewees thought this obstructed the knowledge potential and advancement of the university itself. The institution would become mired in mediocrity, with academic staff reproducing knowledge that would be neither questioned nor challenged. The interviewees stressed that when individual departments, which are disciplinary in nature, have high rates of academic inbreeding, it is hard for new topics and interdisciplinary research, usually at the forefront of scientific development, to emerge. These arguments are in line with the expectations of Pelz and Andrews (1966) and the empirical results of Horta et al. (2010).

[3] Data retrieved from the Ministry of Education statistics website: http://www.dgeec.mec.pt/np4/home.

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"*Inbreeding is a negative characteristic in genetics. Respectively, when using the term academic inbreeding, we talk about close related crossbreeding and, consequently, degradation (…) There is a risk, when "incest" becomes a dominant strategy. If it is precisely aimed, there is nothing to be afraid of. If it becomes the dominant strategy, self-reproduction, then the risk of professional insularity emerges and it is dangerous because of what I call 'local thinking.'*"

[Russian expert, vice-rector at regional university]

"*Academic inbreeding in the perfect sense of the word is bad, people that trained and remained working always in the same research teams is harmful (…) the ideas are not fertilized and people end up living in a sterile environment due to the lack of cross-breeding with new ideas.*"

[Portuguese expert, former policymaker, current departmental chair]

Due to the power relations between seniors and juniors (inbred academics tend to be mentored by the former), the tendency would be for research to follow in the directions that are popular among the senior academics. Interviewees emphasized that this made it difficult for the assimilation of new ideas, novel ways of thinking, creativity, and the integration of newcomers to the university. The Russian interviewees, however, put more emphasis on the impact that academic inbreeding practices have in terms of power relations, underlining the relevance of seniority over research proficiency and effectiveness as the most important factor in terms of social power and status. This issue was deemed to have a critical importance on the conformity of younger newcomers and inbred academics to the university's status quo, since the younger academics were required to maintain good relationships with their seniors for purposes of career progression. The scientific independence of young academics is understood as being constrained by these power relations, which are consolidated by the older generation of academics who retain the real power.

" *— What aspects influence the recruitment of alumni?*
— A reproduction of traditions (…) secondly, the communication among teachers. Perhaps, a disadvantage is the authority of the mentor or somebody from the older generation, which is established, and very hard to shatter (…) we still have stereotypes about a young person growing, proving him or herself in practice and so on. We do not think that the person has already achieved a certain level, overcome specific problems, or that we can delegate more serious tasks to that young person."

[Russian expert, vice-rector at regional law academy]

However, academic inbreeding practices were also seen as positive in the sense that they allow for the recruitment of the best candidates when these are to be found in-house. It was added that this kind of inbreeding is critical in the early stages of developing departments and disciplinary fields at national and institutional levels, particularly when it is difficult to find better potential candidates from elsewhere. The practice was also seen to create strong institutional identities and permit rapid organizational development, leading to the creation of stable and consistent research teams. The rapid development and consolidation of research teams was to a very large extent fostered by mitigating uncertainty when recruiting academic candidates. Those in charge of hiring know exactly who they are bringing in; senior academics often recognize the potential of in-house candidates from an early stage of their studies, and strive to involve them in teaching and research activities from the very beginning of their educational path at the university, in preparation for an in-house university career.

"*In a time of scarce resources in terms of knowledge, funding and information, which was the basis of the story of the past, academic inbreeding was part of the process of forming universities, it was the sole strategy to build teams, and for some practices and knowledge not to be lost from one generation to the next (…) in countries that have no capacity to balance between those highly qualified academics that leave and those that enter, the trend is always to keep their own and make their exit difficult.*"

[Portuguese expert, former policymaker, current research institute director]

"*The main advantage of hiring graduates from our university is that they have learned here. We do not need to acquaint them with established traditions. (…) The second thing is the teaching experience, which they have learned by studying here.*"

[Russian expert, director of research institute at federal university]

This clearly underlines the importance of internal job career structures in academic inbreeding processes (Burris, 2004) as well as the relevance of being integrated in social networks that demand strong identity and a sense of belonging (Vásquez-Cupeiro and Elston, 2006). The Russian interviewees added that another positive feature of academic inbreeding is the ability to hire and maintain highly qualified academics from within the university as such candidates are likely to accept existing conditions that others from outside would not accept. This feature of academic inbreeding was also identified as a human resource strategy in the University of Texas by McGee (1960) when that university was struggling to improve its research and teaching standing while constrained by limited resources.

" *— Is the information about a new position public? If so, advertised by which channels?*
— Well, newspapers, the Internet as usual. We have a website, we post announcements there. We have the newspaper. In other words, everything is open, but the question is: do we need to have a pig in a poke? If we take somebody [internal candidate], it means that it is our graduate, a person already at PhD level, or someone that is our partner. Thus, we know that person and, therefore, we can call for him or her."

[Russian expert, dean of humanities faculty at regional national research university]

4.2. Origins and persistence of academic inbreeding

The implementation of academic inbreeding practices in both Russia and Portugal has a similar rationale that mirrors

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findings concerning the Japanese higher education system (Horta et al., 2011). An institution with poorly qualified academic staff implements mechanisms to hire their best graduates as a way to augment the institutional knowledge base and national prominence.

In Portugal, academic inbreeding at doctoral level was strongly promoted after the return of Portuguese academics who did their doctoral research abroad. On their return, there was a need to build up recently established research agendas, and to support knowledge building by attracting doctoral students. This led to a win–win situation for both parties. For the doctoral students, there was an understanding that an academic job would be more or less guaranteed on concluding their PhD. The fact that recruitment followed a non-transparent process, highly influenced by senior academics wanting to strengthen their research teams in their areas of research interest, ensured that recruitment practices were weighted heavily in favor of internal candidates. This also suited departmental strategies. In this context, quality was not necessarily the most critical issue but rather conformity, as the quote below suggests:

> "*There is academic inbreeding in universities all over the world. The problem is that in some Portuguese departments, mediocrity proliferated. If a university is mediocre from the start, it will do all that is possible to maintain itself as mediocre; therefore the mediocre individuals that inhabit it will have the tendency to hire other individuals that are as mediocre as they are.*"
>
> [Portuguese expert, former policymaker, current department chair]

As several interviewees reported, advertisements for vacancies often demanded such specific qualifications or experience that one could identify the individual that would be hired for a particular job. For the universities, the hiring of PhDs mentored by their own academic staff ensured a rapid build-up of research and graduate teaching capacity. This allowed the fastest growing universities to establish a strong national reputation through research proficiency, with the added bonus of creating consolidated research teams embedded with a strong institutional identity. This was complemented by a narrow research scope that would further single out the university as dominating in a specific knowledge area.

> "*The practices of favouring academic inbreeding have a lot to do with recruitment at Portuguese universities, which are too internal, very determined by departments where the vacancies exist and that is fatal (…) some years ago, the terms of reference for a vacancy were such that one could understand who would fit that profile and who would be awarded the position.*"
>
> [Portuguese expert, current policymaker]

In Russia, strong incentives for graduate programs with high enrollment favored recruitment for graduate studies from the undergraduate ranks in the same university. The best PhD students were given assistant positions at an early stage of their studies. They were gradually integrated into the academic core during their studies so that at the end of their PhD studies they were already considered as a part of the faculty. This process was closely associated with two factors: one being highly specialized training, which enabled universities to enjoy a monopolist position in research and training in specific skills sets and knowledge. The narrow scope of training was partly an inheritance from the Soviet period of the planned economy where specialists were trained not for the market but for particular industries and roles. The other factor is the concept of scientific schools, which is grounded on several generations of scholars working together for several years, nurturing the next generation of scholars to ensure success. In this context, mobility and change of institution are quite often considered as a sort of betrayal, and competition with those perceived to be best scholars considered hostile.

> "*First of all, our selection [of own students] represents the continuity of the scientific school. We have a very narrow, deep focus, a competitive department. Therefore, at the end, we are interested in: first, give them a job; second, a scientific career, for our people, because there is an institutional soul; third, assure a continuity of the scientific school.*"
>
> [Russian expert, vice-rector, director of research institute, chair head at federal university]

> "*If we speak about recruitment, the key person in this process is the department head. They are responsible for recruitment for their own departments. At most departments, academics are groomed by their own departments. They choose future academics among their alumni. It is very rare that we find academics of such a kind somewhere outside. Therefore, we educate and prepare teachers from our students (…) Farsighted heads lead and entice students in the first year of study and try to prepare them for teaching when they are still students.*"
>
> [Russian expert, deputy vice-rector, large selective research university in Moscow]

In general terms, the origins and persistence of academic inbreeding in Portugal and Russia are the same, even when considering the different evolution of their scientific and higher education systems. In both countries, the practice of in-house scholars working together for several years to nurture future generations was encouraged. This led to the development of a narrow research scope on which to build a deep knowledge base. Yet, differences in terms of the characteristics and the evolution of the Portuguese and Russian scientific and higher education systems have uncovered other reasons to explain the persistence of academic inbreeding as a recruitment practice.

In Portugal, it was argued that the limited number of universities with sufficient quality in certain scientific fields hampers the mobility of academics. High quality research in some scientific fields is limited to a single university. This makes academic mobility problematic as change might mean a move to a lower quality institution where work might not evolve satisfactorily. According to the interviewees, this is the opposite to the case in the US higher education system, where a successful PhD student from Berkeley can easily move to Yale, Cornell, Stanford or many other universities, confident that similar standards can be found. In addition, social and economic norms that complement often informal socio-cultural values also constrain mobility. Cultural and social aversions to mobility (especially from the large cities) are a recognized Portuguese

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characteristic. This is associated with a limited rental market, further hampering mobility opportunities and favoring academic inbreeding. Also, and similarly to Spain (Sanz-Menéndez et al., 2013), PhDs prefer to remain and bide their time until a suitable position becomes available at their home university.

> "*There are some features that make national mobility in the academic job market difficult. One is that it is not easy to find homes to rent.*"
>
> [Portuguese academic]

In Russia, the limited rental market was also mentioned as being problematic for the mobility of academics. However, the main reason given is the low level of academic salaries. The problem is twofold: on the one hand, the starting salary of academics is so low that young PhDs find it difficult to rent apartments in other cities, making the transition costs of moving impossible. Starting salaries offered by different Russian universities do not differ substantially (Androushchak and Yudkevich, 2012). In addition, salaries outside academia are comparatively higher, making it difficult for universities to attract PhDs back into the academic world. Therefore, the institutional strategy of the universities is to offer early involvement in teaching and research activities to prevent those PhD candidates with most potential from even attempting to try the job market outside academia.

> "*The main problem is that most economic specializations in which we train students, are not beneficial from the financial point of view for the young people in terms of working at the university (…) by working in business it is possible to gain several times more than any associate professors or assistant professors. You can earn a much greater salary at the age of 22 than your university colleagues in their 30s.*"
>
> [Russian expert, deputy vice-rector, large selective research university in Moscow]

> "*A world practice welcomes situations in which self-reproduction is reduced to a minimum. The situation, when alumni come to work at their departments, should not predominate. It is an American and European practice, where mobility is extremely well developed, when it is possible to work at different universities with a contract. However, we must not forget the housing issue. A person needs an appropriate income for an apartment rental. It is a vicious circle. No income, no housing, and vice versa.*"
>
> [Russian expert, vice-rector at regional university]

4.3. Changes and pressures to change academic inbreeding practices

The interviewees agreed that academic inbreeding starts to lose its beneficial effect in the evolution of higher education systems when a critical mass is attained. As modern higher education systems evolve, becoming more competitive and diverse, academic inbreeding becomes an increasing handicap. The interviewees added that the growing complexity of knowledge undermines the rationale for academic inbreeding practices, arguing that conformity to institutional values should be replaced with quality, creativeness, mobility and collaboration. In relation to these qualities and the heterogeneity of the people and ideas that they encompass, academic inbreeding detracts from scientific and scholarly activity.

These factors are clear in the Portuguese case, as the growing number of PhDs, trained in Portugal and abroad, have started to put pressure on university recruitment practices. Portuguese universities have started to receive many applications for each advertised position; with more transparent recruitment processes, there is a growing difficulty in opting for a local candidate when better candidates from outside are available.

> "*We are beginning to have a large number of doctorates, and unlike in the past, an opening for a vacancy for an academic post today has one or two dozen applicants from several universities, both national and foreign. The many highly qualified applicants and a pressure for quality in scientific production have undermined academic inbreeding.*"
>
> [Portuguese expert, current policymaker]

In this context, the public policies that fostered internationalization and mobility at doctoral and postdoctoral levels have placed further pressure on continuing academic inbreeding practices. Nevertheless, the main obstacle to breaking away from academic inbreeding in Portugal is related to the size of the academic job market and the identification of academic excellence with one or two specialized universities. Moreover, the pressures to diminish or mitigate academic inbreeding practices seem to be strongly influenced by disciplinary boundaries, and their greater or lesser engagement in internationalized research practices.

> "*Academic inbreeding lost its rationale with the development of higher education for the masses and the creation of research universities in the second half of the 20th century, where what matters is the qualities for research and not solely the pedagogic skills (…) what seems to be favouring academic inbreeding in small and medium-sized countries is the fact that there are not that many alternatives in national academia for one to move to.*"
>
> [Portuguese expert, former policymaker, current research institute director]

> "*I believe that departments of social sciences and humanities do not see academic inbreeding as problematic, but rather as added value. I have been in departmental discussions where it was strongly argued that academic inbreeding is a major strength of the institution.*"
>
> [Portuguese, former policymaker, currently an academic]

In Russia, the analysis of the interviews revealed little pressure to change ongoing academic practices, but a number of systemic changes are adding pressure to change the status quo. One of these changes relates to the fact that the most promising students leave the Russian higher education system to enroll in master's degrees and doctoral programs in European and US universities (an option that students did not have in the Soviet period). This trend breaks the circle of academic inbreeding practices in Russian universities (as described in the origins and persistence of academic inbreeding). Another change is related to the fact that educational

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programs have started to become more general, in a framework emphasized by the Bologna process, and there is now growing competition for students. Some Russian universities with high rates of academic inbreeding are losing their monopolies of skills and excellence in particular disciplinary fields. Finally, the government has launched a number of programs aimed at leading support universities. These offer incentives for hiring highly-productive research scholars (Yudkevich, 2013).

When reflecting on policies that can limit the practice of academic inbreeding, three main ideas were consistently mentioned throughout the interviews (by both Russian and Portuguese experts). The first idea is that trying to terminate academic inbreeding practices through decree or by law would be a mistake. This would be detrimental as it would prevent universities hiring an internal candidate, where that candidate was better than an external candidate. For the academics, it would also be detrimental because mandatory mobility would entail moving to a university that might not have the same academic research interests, or even the best and most appropriate facilities/instrumentation (in the case of hard applied disciplines, for example) for the pursuit of high quality research. This would damage both the prospect of interesting scientific findings and the career of the researcher. In this context, examples of countries where such laws have been implemented were given as an example of what not to do when limiting academic inbreeding practices.

> "*Some countries have draconian policies against academic inbreeding. Someone gets a doctorate at one university and has to be hired by another university without exception. That is the wrong policy. By making it mandatory, it leads to certain cases where the university cannot hire a suitable candidate and it has the side effect of sending someone with qualifications to other universities where he or she might not accomplish anything useful (…) there is another side of it, someone that has a doctorate from another university in Portugal is most likely of an inferior quality that we would have no choice but to hire in such a situation.*"
>
> [Portuguese expert, former policymaker, current department chair]

> "*Should the government somehow regulate recruitment policies? You know, I believe that it should not. If the government starts to regulate, we will get everything as before. When somebody starts to regulate everything it is not a good sign.*"
>
> [Russian expert, Deputy vice-rector, State University in Moscow]

The second idea is related to the need to internationalize research and doctoral programs, fostering brain-circulation. The internationalization of research and postgraduate education, namely at doctoral level, was deemed as critical to reduce academic inbreeding rates through a change in mentality and institutional cultures. Two paths towards internationalization were regarded as necessary, if possible, complementing one another. The first is the promotion of periods of mobility abroad, including sabbaticals, and maintaining a constant engagement in international activities that involve collaboration in research and advanced training activities. In this regard, the interviewees underlined that the aspects of academic inbreeding detrimental to academia cannot be solved solely through Information and Communication Technology (ICT) processes and ICT-enabled meetings (virtual mobility as defined by Hoffman, 2009) or by participation in international conferences; the institutional mobility of PhD candidates and academics is required. Institutional mobility and the experience of living in different institutional environments were deemed as essential for individuals to be exposed to new ideas, new forms of thinking, and engagement.

The second area of internationalization is related to bringing in people from abroad. This is demanding in terms of integration, particularly in environments dominated by academic inbreeding traditions, where resistance to outside knowledge tends to be present (see Horta et al., 2011). Nevertheless, several interviewees mentioned that hiring promising academics from universities abroad not only provides incentives for academics and students at the host university to work with them but also enables a faster and wider cross-fertilization of ideas at the institutional level.

> "*Mobility and internationalization are the keywords (…) make it that people have the possibility to spend some time abroad, and create the conditions for universities to receive people from other countries. It is the exchange of ideas and moving that bear fruit sooner or later. ICT can help and many things can be done using those resources but personal contacts, the debates and the feeling of different institutional environments are irreplaceable and necessary for science (…) if there is anything that contributed substantially to fight academic inbreeding in Portugal, it was its science policy by forcing the need for internationalization.*"[Portuguese expert, current policymaker]

> "*A lot of people go for research visits abroad. Everyone, who comes back, shares the experience.*"[Russian expert, vice-rector, director of research institute at regional state medical university]

Finally, the interviewees stressed the importance of promoting quality through transparent recruitment processes, international advertisement of vacancies, and the integration of international academics in the recruitment committee to guarantee impartiality in the choice of the candidates. In this context, the interviewees acknowledged that the recruitment of new academic staff should be based only on meritocratic assessments of scholarly quality, allowing for in-house candidates to be hired where they are the best candidates for the job. This meets the argument that academic inbreeding should not be perceived as a "black box" and as uniquely damaging to scholarly and academic work. A national policy that was proposed, mainly by Russian interviewees, referred to the possibility of subsidizing rental apartments to meet the obstacles of the rental market.

5. Conclusion

This article contributes to knowledge on academic inbreeding by comparing inbreeding in two higher education systems that have more differences than similarities. These two systems

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were chosen, since despite systemic, institutional and policy differences resulting from specific development paths, they have high academic inbreeding rates in common. This comparative analysis helps in understanding the key features of academic inbreeding, particularly when focusing on explanatory variables concerning the conceptual understanding, origins, resilience, and possible changes regarding this social phenomenon.

The findings show more homogeneity than heterogeneity with regard to the understanding of academic inbreeding as a social phenomenon, its roots, dynamics and role in developing higher education systems. There was almost overwhelming agreement that academic inbreeding should not be considered as completely negative or harmful. Rather, inbreeding is considered as detrimental to the development of higher education systems only at the more mature stages of their development. Academic inbreeding was considered as inevitable, and actually as essential, in the initial stages of the formation of higher education systems. It speeds up the consolidation of scientific and academic teams, provides cohesion to scientific, academic and institutional agendas, and fosters organizational identity and stability. It is the advent of massification, the growing role of academic research, and the need to meet complex societal and scientific demands that erodes its rationale, making it obsolete.

The origins and persistence of academic inbreeding relate to the dynamism, scientific and academic development, and international attractiveness of higher education systems. It works as a valuable policy to retain the best students when attracting others with similar or better potential is not realistic. Organizational stability is also positively affected by academic inbreeding. Yet, here one walks on a thin line. The very same arguments assume a perverse effect when used to undermine the hiring of the best candidates from outside, the cross-fertilization of ideas, meritocratic processes, and the need for change when institutions no longer have difficulty in attracting the best possible candidates and when stability is no longer in serious jeopardy. The modern university requires flexibility, entailing frail organizational stability, which needs to be reinforced by other mechanisms on a daily basis (Shattock, 2009).

The obstacles to change are often related to strong institutional identities, organizational stability, values (i.e., tradition), norms, and taken for granted habits (including power structures that strive to maintain the status quo), which became ingrained due to academic inbreeding itself. Some disciplinary fields and narrower training systems were found to be more resistant to change than others. However, our research found that low academic salaries and lack of appropriate rental accommodation can also act as external factors that favor academic inbreeding.

The level of pressure for changing recruitment practices differs between Portugal and Russia. However, the outlook on policies to curtail academic inbreeding was remarkably similar between the Russian and Portuguese experts. There was a complete aversion to the idea of terminating academic inbreeding by decree, which was understood as potentially more detrimental than beneficial (terminating academic inbreeding by decree is also problematic, as the decree regulations to prevent this practice can always be circumvented; see Kosmulski, 2014 regarding the case of Poland). Instead, it was suggested that policies strongly supporting internationalization and brain-circulation could be critical in changing mentalities and in promoting the integration and dissemination of novel ideas (Heitor et al., 2014). Finally, there was a clear emphasis on the need to consolidate open, merit-based, transparent academic recruitment processes to reach as many applicants as possible. It was argued that such practices would benefit universities with a wider pool of human potential, but also reduce the perceived need that exists in some cases to hire the best in-house candidate simply because they are the best one can expect to get.

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