Partners in a journey to the centre of the world: Spanish and Japanese knowledge transfer and alliances in the Spanish healthcare industries (1960s–1980s)[1]

Abstract: This study analyses the role of commercial and technological alliances with Japanese firms in the internationalisation of Spanish healthcare corporations between the 1960s and the 1980s. These alliances taught the local partners to operate in global healthcare markets, particularly in legal, organisational, and financial terms. Firms like Almirall, Hubber, and Grifols, benefitted from Japanese knowledge transfer to enter Asian and American health care markets. The case of Grifols, for which more archival sources are available, is the focus of the article, and demonstrates that alliances with Western subsidiaries of the Japanese Green Cross Corporation played an instrumental role in teaching the managers and technical staff of the Spanish healthcare firm to go beyond their previous exports and undertake foreign direct investments in the US health market. The study suggests a future research agenda to explore more about East–West alliances in the internationalisation of peripheral economies of the world.

Keywords: FDI; healthcare; multinationals; emerging markets; Japan; Spain; Grifols; Almirall; Hubber; Alpha Therapeutic Corporation; plasma industry

Introduction

This study analyses the instrumental role played by commercial and technological alliances with Japanese firms in the internationalisation of Spanish healthcare corporations between the 1960s and the 1980s. The hypothesis is that these alliances contributed to the internationalisation of Spanish companies by teaching the local partners to operate in the global market, particularly in legal, organisational, and financial terms. Spanish companies that successfully forged alliances with Japanese firms between the 1960s and the 1980s obtained not just high-tech Japanese products, but also all updated, standardised, and simplified technological, commercial, and organisational knowledge, about how to cross regulatory and commercial entry barriers in developed health care markets of the world, and undertake long-term projects of foreign direct investments in them. Research has found at least three cases of Spanish health care companies in which

Japanese contacts and alliances in those years played an instrumental role to cross entry barriers in American and Asian markets, for export activities in most of the cases but to start direct investments in those markets and compete with first movers in those markets, in some other cases. Empirical evidences from archives and oral sources have been particularly abundant for one case study, the Grifols corporation, which is the third world company in the plasma protein industries today, one of the leading corporations in the United States in this industry, and one of the three most outstanding foreign health care corporations investing in the acquisition of health care corporations in the United States in the last decade.

The empirical evidences are limited, but suggest a hypothesis that further research must confirm: that strategic and successful East-West alliances helped corporations from peripheral economies of the world complement capabilities to help them cross entry barriers in global health care markets. The empirical evidences presented in this article suggest that these alliances were not exceptional, and that their common goal was to exchange competitive capabilities to cross entry barriers in global markets, as a first step to compete in the long-run with first movers. The study has found, finally, empirical evidences that further research would need to confirm, about the role played, in these alliances, by "culturally hybrid managers", managers with organizational capabilities from very different business cultures who are able to use them to influence successful East-West alliances.

Spanish healthcare corporations have not preserved complete archival records of their human resources departments and the reliability of oral sources is not always easy to test. The case of Grifols, for which a variety of oral testimonies from managers and archival material has been gathered, reveals that the alliance (1982–1998) with Alpha Therapeutic Corporation (the US subsidiary of the Japanese Green Cross Corporation),

was of extraordinary importance for the transformation of the Spanish corporation into a global player-The domestic market represented 96% of Grifols' sales in the early 1970s, but during the first decade of the twenty-first century it dropped to less than 6%, with the focus shifting to the US market. A key factor in this shift was Grifols' alliance with the US subsidiary of the Japanese Green Cross Corporation between 1982 and 1998. During these years, Japanese and North American managers taught the highly qualified staff in Grifols how to adjust their organization and their manufacturing and commercial facilities to meet the different legal, organisational, and financial requirements they needed to obtain their first US Food and Drug Administration license to manufacture products in Spain. This licence made possible to manufacture in Spain products that could be sold in the US market, the most rapidly expanding market for healthcare products in the world in the second half of the twentieth century and the first decades of the twenty-first century.

The Grifols staff had accumulated organisational and commercial knowledge on how to operate as a large professional corporation from previous North American partners in their joint partnerships of the 1960s-1970s: leaders in plasma manufacturing (Dade Reagents Inc. from Miami 1960-1965), and hospital equipment distribution (American Hospital Supply Corp. from 1966 to 1982) in the United States.[2] They had already learnt from US corporations how to integrate scale and scope, to increase production and distribution and professionalize their management, essential capabilities needed to start their exports of plasma products to the United States, and supply much needed hospital supplies to their expanding new hospitals. In the late 1970s and early 1980s the company incorporated a young third generation of the Grifols family, and took the decision to go a step further, with a new partner, that could help them undertake internal changes to follow US rules of manufacturing to sell into their market, and think about investing in the United States. Grifols needed to learn how to follow the complex quality requirements of the US

administration in the Grifols factory in order to receive an FDA license to sell the products manufactured in Spain directly in the US market. Interviews with the Spanish and Japanese CEOs involved in this process revealed that both agreed that the alliance and the trust established between the Spanish and the Japanese corporations were the key that opened the door for Grifols products and investments to access the extremely difficult-to-enter US market. In Grifols, the final spillover of the alliance between this Spanish company and the Japanese–US multinational did not occur in the host economy, but rather involved the globalisation of the Spanish company in tough healthcare markets. The Spanish managers and technical staff were trained by their foreign partners to be a global corporation, to be able to organise a global workforce, and to expand in foreign markets. The study is limited in the amount of empirical evidence provided, but suggests an interesting future research agenda: to discover more about international alliances between East and West and their role in the internationalisation of multinationals from peripheral economies.

The mechanisms of knowledge transfer between multinationals from late-developing and developed economies have been explored by management scholars, international business scholars, and business historians (Mathews 2006; Johansson 2009; Cantwell 2013; Guillén and García-Canal 2013; Cano-Kollmann et al. 2016; Fernández Pérez 2015; Buckley and Fernández Pérez 2016). Developing economies in the global periphery have frequently faced difficulties in the transfer or creation of innovations, in contrast with developed economies (Jones 2005; Schröter 2015; Abe 2015; Fridenson 2015; Umemura 2015; Wada 2015; Fernández Pérez 2015). The concept of periphery is used in this article with a geographical, and an economic meaning. As Tadao Umesao, and Kenichi Ohno have indicated, East Asia and Western Europe and are the periphery of a big geographic Eurasian region (Ohno 2006, 8). From an economic point of view,

Japanese catch-up with leading Western countries would have started in the late 19th century and early 20th century, but wars and military conflicts (with Korea, China, Russia, and the United States) and an economic policy led by military interests did not strengthen the Japanese economic development. The economic growth that took place in Japan between the mid 1950s and the mid 1970s (10 per cent average annual GDP growth) made Japan second largest economy in the world after the United States around 1970 (Ohno 2006). On the other side of the Eurasian periphery, Spain´s catch-up with leading Western European countries would have started, as Japan´s, in the late 19th century and early 20th century, but wars (the Spanish civil war of 1936 to 1939) and above all a long-lasting military dictatorship that lasted four decades until 1975 drove the Spanish economic pathway of growth far from the pathway followed by more developed economies: when Spanish integration in European economic institutions took place in 1986, European funds had to be transferred to Spain, to help backward regions´convergence with the average Western European regions, until recent times (Carreras and Tafunell 2003). To sum up, Spain and Japan are both geographically in the periphery of Eurasia, and from an economic point of view both were developing economies in terms of their convergence with leading economies, until the 1950s in Japan (Ohno 2006), and until the 1990s in Spain (Carreras and Tafunelll 2003).[3]

Far from the economic center of the world, innovative scientists and entrepreneurs in the health care industries existed, in small biomedical urban clusters in the Eurasian periphery, before 1945. New technologies of the late nineteenth century and early decades of the 20th century such as blood derivatives manufacturing, were not widespread in the Eurasian periphery before the 1950s. Innovative products like plasma and plasma proteins were often introduced to potential clients in a personal way and in small quantities, often in scientific international conferences like the annual International Congresses of Blood

Transfussions that started in 1947, the Symposiums on Blood Bank Methodology that began in 1953, and the Congresses of the Société Européenne d´Hématologie that started in 1949.[4] Doctors, nurses, and employees of different qualification and salaried condition, working in hospitals, clinics, or laboratories, were the intermediate consumers who transferred these new products to the final real consumers, who were the sick, the patients. The medical and the pharmaceutical professionals, as well as the sick, were fragmented in dispersed buildings in the countryside and in the cities. Transportation and communication costs were high, therefore, the health care markets only took its modern integrated shape after the 1950s-1970s. Uncertainties and risks were overcome, in the periphery, often through informal and formal alliances to buy and sell new technology, products, and knowledge. Professionals of the health care sciences became, sometimes, managers, combining scientific knowledge about the blood industry with organizational knowledge. International alliances and joint-ventures helped reduce uncertainties and risks, but also helped the creation and transfer of knowledge in new industries like the plasma industry.

Knowledge and training of lab owners and their workforce were the most significant long-term spillovers of international alliances, before the internet era. These can be tremendously slippery research topics due to the lack of appropriate written documents on subjective issues like who is really influenced by the international activities of a multinational in a host economy and how. There are also problems with the preservation of documents held by small- and medium-sized companies, and informal networking or informal workforce training is not commonly recorded by family-controlled small and medium-sized enterprises (Fernández Pérez 2013). Oral sources can help fill some of these informative gaps.

On the other hand, the long-term spillovers derived from the international activity of multinationals are considered here in a broad sense. Based on empirical evidence from small- and medium-sized Spanish enterprises entering into partnerships or agreements with Japanese multinationals between the 1960s and the 1980s, long-term spillovers are defined here following a geographically and temporally flexible perspective. In a geographical sense, the training of the local workforce by a multinational may produce tangible or intangible assets that have an influence not in the host economy, but in a country other than where the headquarters of the multinational and its subsidiary or partner are located. Therefore, the spillover effects of the multinational activity of a local company may affect countries other than that of the host economy. This is particularly true if the local company is small when the alliance with the multinational is established, but becomes a global company after the alliance has ended, as happened in the Grifols case. Secondly, from a temporal perspective, the tangible or intangible effects of spillovers can be observed very shortly after contact between a multinational and a local subsidiary or partner is established, but they can also be observed decades later when contact between the multinational and the local company has come to an end. Therefore, flexible geographical and temporal dimensions need to be taken into account in order to understand the changing dynamics of the spillovers of a local company that enters into an alliance with a multinational. As we will see, this is one of the most interesting methodological and conceptual conclusions that can be drawn from the primary case study presented here: the long-term spillovers derived from the partnership established by US and Japanese corporations with the Spanish Grifols between the 1960s and the 1980s.

This article has used written historical material from three companies (Hubber, Almirall, and Grifols) that were small- and medium-sized enterprises in the mid-twentieth

century.[5] They have no classified records on their human resources beyond statistics on the number of employees, lists with the names of the staff, and biographies of the most outstanding employees and staff at the time of their death or retirement. However, members of the second or third generations of the family founders are still alive and preserve excellent memories of important issues that have no other historical record. For these reasons, the article has complemented available primary and secondary evidence on the internationalisation of these companies with conversations and interviews with relatives of the laboratory founders: one of Félix Gallardo's daughters, Carmen Gallardo, in the case of Laboratorios Hubber; Víctor Grifols Roura for Grifols; and Antonio Gallardo Ballart for Almirall. Interviews and other sources have yielded a wealth of information for the case of Grifols and comparatively much less for Hubber and Almirall. Therefore, the focus of the analysis and the conclusions are fundamentally based on evidence from the Grifols corporation.[6]

Laboratorios Hubber and Laboratorios Grifols were among the first laboratories in Spain to produce plasma products and Almirall was one of the first to distribute and sell innovative pharmaceutical products. The three were founded and managed by outward-looking entrepreneurs who frequently bought from European suppliers before internationalising their companies.[7] Laboratorios Hubber established connections with *sogo shosha* working for the National Health Institute of Japan and the Department of Biology of Osaka University in the early 1960s; Laboratorios Almirall had connections with the Meiji and Dai Nippon corporations since the 1970s; and the Grifols business group had a joint venture in the plasma industry with the Japanese Green Cross Corporation (through an agreement with its US subsidiary: Alpha Therapeutic Corporation) between 1982 and 1997.[8]

These alliances (established during the first decades of accelerated knowledge transfer and training in healthcare industries in the periphery) can provide information about the connections that the global periphery established to overcome difficulties in the diffusion of knowledge and the training of managers in newly industrialised healthcare corporations in late-developing economies. This article aims to add to international business history literature with evidence on the little-known contribution of Japanese knowledge transfer to the modernisation of innovative Spanish healthcare industries and corporations. The study suggests a hypothesis that further research would have to test on the significance of peripheral East–West alliances in reducing knowledge gaps (in technology, management, and finances) with the economic centre of the world and in enabling the periphery to invest in developed economies.

International business theory has explored knowledge transfer and the influence of weak and strong ties within social networks and among diaspora that allow knowledge to cross borders between subsidiaries and headquarters and between partners in joint ventures and alliances (Kano-Kollman et al. 2016; Miravitlles and Zhang 2016). Location and economic geography are important factors for understanding knowledge connectivity across territories. Abundant cases have already shed light on North–North or North–South knowledge transfer mechanisms, and more recently on South–North connections and foreign direct investment (FDI) (Guillén and García-Canal 2010; Casanova 2016). However, very little interest has been devoted to East–West peripheral alliances that are instrumental in accelerating knowledge transfer in global market operations between multinationals. The evidence presented in this article, though limited, suggests that East–West peripheral alliances in the Eurasian region may have played an important role in knowledge transfer, training, and internationalisation in multinationals in late-developing economies like Spain. Japan (a peripheral economy until the 1950s, with early

experiences in learning transfer from the North in the early 20th century, and difficulties in investing in developed economies in the 1950s–1960s) had accumulated internationalisation experience and contacts in developed economies (like the UK, the US, and Germany). The cases presented here reveal that in their negotiations with the Spanish, Japanese corporations offered their simplified and standardised knowledge of updated managerial practices for handling large corporations within knowledge-intensive industries. The previous efforts of the Japanese to absorb capabilities from the centre helped the Spanish to acquire those same capabilities during the 1960s–1990s.

This article provides evidence of successful knowledge transfer and local training between East and West in the global periphery in a relatively neglected and understudied area for which most scholars have merely underlined the failures and the difficulties ~~of connectivity~~ (Umemura 2015; Abe 2015; Kudo 2015; Schröter 2015). Furthermore, this paper confirms that, when successful, Spanish–Japanese alliances in the 1960s–1980s had important long-term effects on the training of local talent in Southern Europe. This was not just at the technological or organisational level, but also involved connecting and transferring useful knowledge from periphery to periphery about global finance, global alliances, and global merger and acquisition operations by peripheral economies in developed economies.

The three cases provide lessons about these mutually profitable early East–West alliances that helped the partners advance in the globalisation of their peripheral economies. The study also outlines the relevance of 'culturally hybrid managers' in making successful connections between the extremely different East–West business cultures possible. With different conceptual orientations, the expression "hybrid managers" or "hybrid management" refers in the literature either to the study of the relation between professions and management (Mc Givern et al. 2015), or the creation or

management practices which are the result of the combination of different cultural origins (Khanna, Song and Lee 2011; Jackson 2015). In this article, we follow this conceptual orientation that defends the critical role of the "human factor" in experiences of knowledge transfer across very different cultures, and how "hybrid managers" with a critical knowledge of different business cultures may fill cultural gaps and ease knowledge transfer. This research confirms these ideas, with evidences about the history of Spanish and Japanese alliances in the biomedical and pharmaceutical industries, and the critical role played for their success by hybrid managers with knowledge from both business cultures. The relevance about hybrid managers to understand other successful Spanish and Japanese business alliances has been observed, for other economic sectors like the stainless steel industry (Fernández Pérez 2015). We define "culturally hybrid managers" as highly qualified professional employees in a corporation that have absorbed the organisational and managerial knowledge of very different business cultures and that are able to perform as cross-cultural bridges in new organisations that are created when two companies from different cultures establish a business alliance or merge. The absence of this hybrid management may explain the failure of alliances or mergers between companies from extremely different business cultures. The positive influence of these culturally hybrid managers had been already demonstrated in the case of Acerinox, a Spanish–Japanese alliance in the stainless steel industry (Fernández Pérez 2015). Moreover, studies about other well-known Japanese–Western European alliances in high-tech industries suggest that the absence of these culturally hybrid managers may explain the failure of alliances in the United Kingdom or Germany during the same years (1960s–1980s) (Schröter 2015).

The hypotheses of the article, based primarily on the case of Grifols and secondarily on the cases of Almirall and Hubber, are, therefore: a) that successful long-

term spillovers from the activity of multinationals may be more visible in the long run in countries other than that of the host economy if the local company becomes a global player in a high-tech industry; and b) that culturally hybrid managers play a key role in guaranteeing trust and coordination between the staff of the companies that enter an alliance or merger when both companies belong to extremely different business cultures.

These hypotheses are tested with the case study methodology that is typical of business history scholarship, using private archives and oral interviews from three Spanish corporations whose internationalisation was strategically influenced by networks and alliances with Japanese corporations. The use of cases for theory-building in business studies has been successfully proposed (Eisenhardt 1989; Eisenhardt and Graebner 2007). The three cases belong to the high-tech healthcare industry. This is a complex industry that includes typical pharmaceutical companies and hospital supply corporations established during the first decades of the twentieth century, as well as the more modern biochemical industries (OECD 2016; Chandler 2005). Two cases were successful and are still very active, leading their global market niches: Almirall in the pharmaceutical industry and Grifols in the biomedical industry. One case, Hubber, a combination of a pharmaceutical and biomedical corporation, was not successful and was sold and then disappeared in the 1980s due to difficulties in planning generational succession within the family. The case of Hubber reveals that alliances and learning from leading multinationals may not be enough in family businesses with no professional succession strategy (Fernández Pérez 2013).

The sources are much more abundant and diverse for Grifols than for Almirall or Hubber. In all three cases efforts have been made to combine corporate documents, interviews with managers and CEOs, and interviews with other company staff, as well as with the founder's family in the case of Hubber. The chronological period covered by the

sources spans from 1960 to 1986. 1960 was the first year after the introduction of a legal reform (the 1959 Stabilisation Plan) that promoted inward FDI in the country and alliances between local companies and multinationals in Spain. 1986 is the official year of entry of Spain into the European Community, after which there was a significant increase in the internationalisation of Spanish companies in alliance with Western European corporations. Between both years, Japanese companies' preferred internationalisation strategy was partnerships with local companies with few full acquisitions. After the early 1990s, Japanese companies changed this strategy and preferred full acquisitions abroad for their outward direct investment (Shacho Kai 2014). For these reasons, the period between 1960 and the late 1980s is an appropriate chronological period for observing the approach of Spanish companies willing to start alliances with multinationals at home or abroad, and for observing Japanese companies willing to enter into partnerships with European countries with few entry barriers like Spain.

The next section presents an overview of the investments made by Japanese companies in Europe, and more specifically in Spain, during the period under analysis. At the end of the section, we indicate some cases where Spanish corporations pursued and/or were successful in joint partnerships and alliances with Japanese corporations. The third section summarises the evolution of health spending in the world between 1960 and 1980, paying particular attention to Japan and Spain and comparing them to the US, Germany, and France. This comparison reveals significant differences in volume and in the creation of market opportunities in the healthcare industries during these years.

The fourth section focuses on the three cases of alliances between Spanish and Japanese corporations in the pharmaceutical and plasma industries. In one case (Laboratorios Hubber), the alliance with Japan in the early 1960s was extremely

successful in educating and training local managers in updated world-class technology in the plasma industry, but inappropriate family succession strategies led the business to its demise in the early 1980s. Laboratorios Almirall and Laboratorios Grifols developed very enduring relationships with Japanese companies that have lasted up until today. In 1973, Almirall initiated contact with Japanese entrepreneurs and companies through product license contracts, a typical strategy in pharmaceutical corporations. Whereas Grifols focused on stable long-term alliances and forged a joint venture (1982–1998), which is a more typical strategy in the plasma industry. The final section summarises the most important contributions made throughout the article and future directions for research.

Japanese companies invest in Europe: Spain on the map

During the first two decades of the twentieth century, Japanese innovative companies and entrepreneurs were eager to absorb capabilities and knowledge from their more developed Western neighbours. (Landes 2006: 216–219).

Immediately after World War II, Japan experienced a period of industrial reconstruction that involved the decline of the family-held Zaibatsu business groups and an increase in the control of industrial policy by the allied forces. After the Korean War, Japan resumed industrialisation with the support of the US, receiving resources to reindustrialise and reducing technological gaps. Moreover, Japanese *sogo shosha* managers and the new *keiretsu* industrial corporations (with the support of their own government and the US government) often travelled abroad as commercial representatives of Japanese firms and learnt how to deal with large corporations and Western developed economies in the US and Germany.[9] Despite the many differences in language and business culture with the West, the Japanese corporations were eager to

learn and efficiently used resources to quickly increase production, productivity, exports, and capital with which to finance imports, industrialisation, and growth in the Japanese economy (Shacho Kai 2014; Schröter 2015). Between 1950 and 1970, Japan focused on importing technology from the United States and the German Federal Republic, particularly in the following industries: electric machinery, organic chemistry, and the iron and steel industries. Two laws introduced in 1950 restricted the entry of foreign capital and imposed rigorous controls on imported technology to be used in these industries to achieve large-scale production. The annual economic growth rate during these decades was around 9%, with high rates of growth in capital, knowledge, working hours, education, foreign trade, and industrial output (Pelegrín and Jensana 2011). The *sogo shosha* controlled two-thirds of Japanese imports and 45% of Japanese exports in 1989 (Shacho Kai 2014: 49). Mitsui, Mitsubishi, Marubeni, Itochu, Nissho Iwai, Sumitomo, Toyo Menka, Nichimen, and Kanematsu were some of the best-known *sogo shosha*, whose catalogues included more than 25,000 different products by the end of the 1980s (Shacho Kai 2014: 48).

Historically, Japanese investment in Europe has been focused on the United Kingdom, the Netherlands, Belgium, and Germany.[10]

Japanese industrial corporations and products soon awakened fears among Western European industrial corporations, particularly in the iron and steel industries, due to their rapid investment in electrical machinery (such as electrical furnaces) and their innovative managerial models (Schröter 2015; Sáez and Díaz 2016). Electronics, the car industry, telecommunications, and steel were the four most important industrial drivers of Japanese internationalisation in Western Europe and the United States in the second half of the twentieth century (Schröter 2015; Fridenson 2015; Kudo 2015; Wada 2015; Shacho Kai 2014). In the mid-twentieth century, Japan was interested in learning from

and selling to developed Western economies. Of the 87 Japanese subsidiaries newly established in Western Europe during 1987, 36 were in the UK, 15 in France, 13 in Germany, eight in Spain, two in the Netherlands, two in Belgium, three in Italy and Australia, two in Switzerland, and one each in Greece and Ireland. Of the 149 Japanese subsidiaries newly established in Western Europe during 1989, 45 were in the UK, 22 each in France and Germany, 13 in Italy, 12 in Spain, 10 in the Netherlands, nine in Belgium, and fewer than four in the other Western European countries (JETRO 2010: Table 1).

Spain was the backyard of Europe at that time, with industrialisation only taking off in the 1960s–1970s and with negotiations for its entry into the European institutions merely beginning in the early 1960s. On the surface it was not a very interesting partner: there was not much to learn from and not much to sell to. In fact, up until the late 1980s, Spain was not a major destination for Japanese industrial FDI. Nevertheless, and despite all the odds, Spain ended up ranking among one of the top four Western European destinations for Japanese industrial FDI in the late 1980s after the slow entry of Japanese corporations into the country during the 1960s: a silent entry but with enduring impacts.

Japan started to take an interest in Spain in the late 1950s, coinciding with its disappointment with regard to the high entry barriers imposed on its products in Germany and France. They suffered significant liability of outsidership (letters to the author from Yoshihiro Kishimoto, February 2013; interviews by the author with Federico Lanzaco, May 2013; Fernández Pérez 2015). While battling for entry into the markets of the global centre, in the short-term Japanese companies had to sell their surplus industrial production and Spain was an interesting option as a rapidly growing industrialising economy neighbouring France.

After the 1959 Stabilisation Plan, Spain significantly reduced its entry barriers to foreign capital, companies, and products, with a strategic interest in encouraging inward FDI and capital flows for much needed imports. Spain had started negotiations with the US and the European institutions in the 1950s and the 1960s to try to reach much needed milestones: to change the country's image; to sign deals with North American and Western European banks and governments; to sign technological and commercial alliances; and to develop energy-intensive and capital-intensive industries within centralised development plans prepared by the Spanish government (General Archive of the University of Navarra, A. Garrigues Díaz Cañabate Collection). Spanish industry and trade ministers and large industrial banks in Spain had a clear interest in the Japanese steel industries and travelled to Osaka to visit Nisshin Steel Corporation and to undertake interviews with its CEO and top management to negotiate their investments in new factories in the coastal periphery of Spain (Fernández Pérez 2015; Sáez and Díaz 2016). The presence of Jesuit schools and universities (Sophia University) in Japan was extremely useful for helping the Spanish to reduce cross-cultural communication problems during the early years of the 1960s, at least in alliances forged in the stainless steel industry (Federico Lanzaco's personal archive; interviews by the author with Federico Lanzaco, May 2013; Fernández Pérez 2015).

Japanese interest in Spain in the early 1960s combined short-term practical aims (to sell surplus industrial products there) with long-term goals to reduce historical problems of liability of outsidership in culturally distant Western European markets. In joint ventures in the steel industry with the Acerinox corporation (agreements with Nissho and Nisshin in 1970) and in the joint venture with Grifols (agreements with Alpha Therapeutic Corporation in 1982), for instance, the deals clearly assigned the Spanish the role of helping the Japanese enter allied markets in South America; geographically close

markets in Central and Eastern Europe; and distant, interesting markets where the Spanish had no previous history of conflict (United States; China). The Spanish had no university chair of the Japanese language in the early 1960s and most entrepreneurs had no command of foreign languages and were particularly ignorant of Asian languages and dialects (interviews by the author with Victoriano Muñoz and Federico Lanzaco, May 2013; Fernández Pérez 2015). Despite the difficulties in communication and the cultural distance, the Spanish managed to negotiate with the Japanese corporations. They were attracted by Japan's highly productive, cheaper, more efficient, updated, standardised, and simplified technological and organisational knowledge. Spanish corporations that successfully enjoyed a long history of alliances and partnerships with Japanese corporations, such as Acerinox in the stainless steel industry (from 1960 up until today), discovered that the Japanese were great suppliers of strategic know-how on global financial markets (helping finance long-term Spanish industrial investments) and on how to deal with leading developed economies such as Germany, the UK, France, or the US.

Aside from the steel industry, the healthcare industry was another market niche in which alliances and knowledge transfer between Japanese and Spanish corporations took place. In 1988, 23% of total Japanese FDI in Western Europe was focused on the chemical and pharmaceutical sectors. In 1999, the chemical-pharma sectors still represented a high 22% of total Japanese FDI in Western Europe, with 20% in 2004 and 18% in 2009 (JETRO 2010; Shacho Kai 2014: 68–69). Japanese contact with British regenerative medicine corporations had been disappointing (Umemura 2015). Macroeconomic statistics from the Japanese authorities and qualitative case studies from Spanish archives (such as those used for this paper) reveal that contact and knowledge transfer seemed to be much more successful, and indeed enduring, between Japanese and Spanish corporations in the healthcare industries. Three experiences of cooperation between

Spanish and Japanese corporations are presented in the following section, the best-documented being the case of Grifols in the plasma industry.

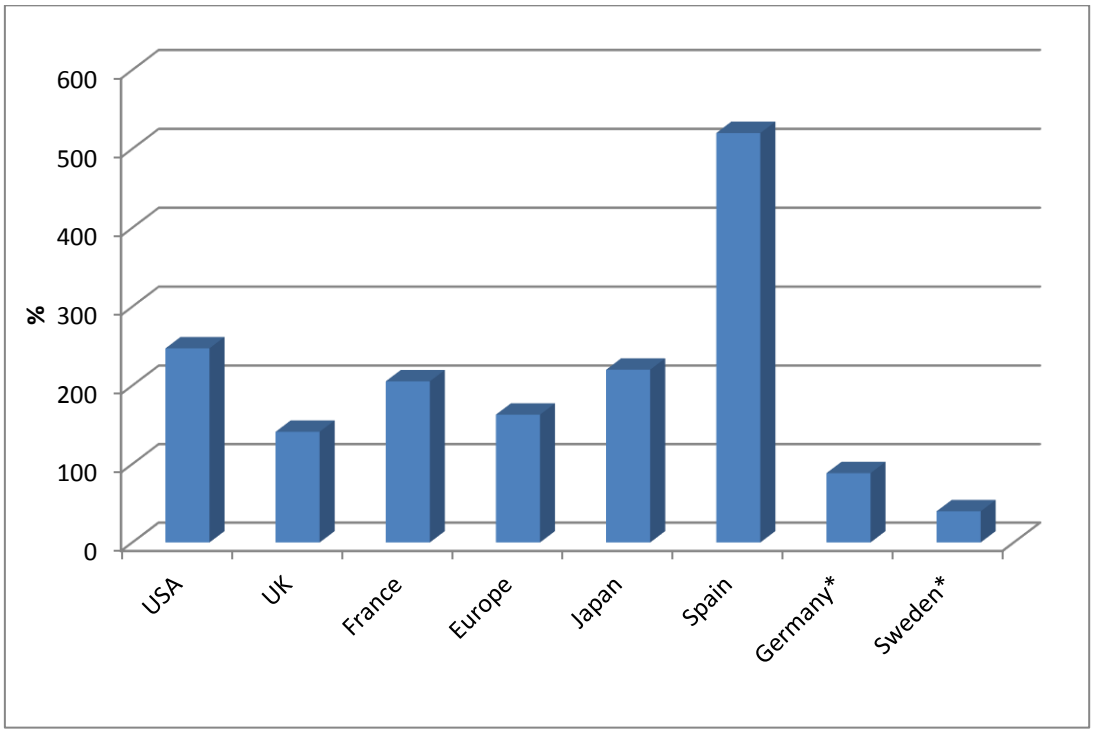
Healthcare corporations and industries in the periphery: Japan and Spain

Japanese corporations in the healthcare industries grew rapidly in scale and scope after 1950 with the direct support of the Japanese Ministry of Health and the Japanese government.[11] The Japanese healthcare system developed with regulations that gave significant freedom to the private initiative in the creation of hospitals, health insurance companies, and medical and pharmaceutical corporations. There was also very little regulation of the prices of healthcare products. The result was a clear incentive for the development of large Japanese corporations with innovation departments producing Japanese drugs that substituted US or German drugs and whose market, due to their scale of production, was soon to be found beyond the Japanese islands.

Former army officers with experience in war hospitals founded companies (as also occurred in the United States and Western Europe) that would lead knowledge transfer to civil healthcare industries and bring about the industrialisation of medical and pharmaceutical products. Some of these companies became large global corporations, as in the well-known case of Ryoichi Naito and the Green Cross Corporation.[12]

Spain was a very attractive market for the healthcare corporations. It was, and still is, one of the countries with the fastest growth in healthcare spending and consumption over GDP. Between 1960 and 1990, the average growth in the percentage of healthcare spending over GDP in Europe, Japan, and the US doubled. Spain, however, was the leading country in the OECD, with healthcare spending over GDP in 1990 at five times that of 1960.[13]

Figure 1. Highest growth in healthcare spending over GDP, 1960–2011.



Note: *CAGR calculated for the period 1970–2011.

Source: Compiled by author using data from the European Federation of Pharmaceutical Industries and Associations (EFPIA). *The Pharmaceutical Industry in Figures: Key Data 2014*: 22.

During the period 1960–1990, Spain was relatively backward in comparison to Japan (both countries had similar GDP per capita in 1960, but already in 1970 Japan doubled Spanish GDP per capita, according to OECD statistics). However, during the same period, Spain had more physicians licensed and authorised to recommend the purchase of medical equipment and drugs to hospitals and patients through the national public and private healthcare system than Japan.

Table 1. Physicians by country (per capita).

Variable	Country	1960	1970	1980	1990	2000	2010	2013
Practising physicians	France	..	..	..	..	..	..	3.1
	Germany	..	..	..	..	3.26	3.73	4.05
	Italy	..	..	..	..	..	..	3.9

	Japan	1.03	1.09	1.27	1.65	1.93	2.21	..
	Spain	..	..	1.84	2.05	3.16	3.76	3.81
	United Kingdom	0.85	0.94	1.32	1.62	1.96	2.7	2.77
	United States	..	..	..	..	2.29	2.43	2.56
Professionally active physicians	France	..	..	..	3.02	3.26	3.27	3.33
	Germany	..	2.08	2.82	3.76	3.58	4.08	4.43
	Italy	..	..	..	..	4.16	4	4.19
	Japan	..	..	1.32	1.7	2	2.28	..
	Spain	..	..	..	2.24	3.41	4.01	4.1
	United States	..	..	..	..	2.45	2.57	2.7
Physicians licensed to practice	Germany	..	..	..	..	4.49	5.37	5.83
	Italy	..	1.08	2.62	4.7	6.07	6.27	6.37
	Spain	1.17	1.34	2.3	3.83	4.45	4.8	4.99
	United Kingdom	..	..	..	..	3.43	3.61	3.72
	United States	..	1.63	2.06	2.47	2.88	3.19	3.31

Source: Compiled by author with technical assistance from Jaime López. Data extracted from http://stats.oecd.org/ on January 22, 2016.
Measure: Density per 1000 population (headcounts).

According to OECD statistics, from 1960 to 1990, Spain had on average ten times fewer hospitals and beds in hospitals than Japan. This data served as a measure of potential consumption of medical and pharmaceutical products. However, the creation of mandatory national health insurance in Spain during this period, and the granting of public subsidies to construction companies to invest in new large public hospitals,

favoured rapid growth in the number of hospitals, beds in hospitals, and healthcare spending in hospitals in Spain. This was an extremely favourable context that created opportunities for the growth and internationalisation of healthcare corporations from the US, Western Europe, and Japan. Foreign corporations, particularly from the United States, Germany, Switzerland, and France, landed in Spain to take advantage of the new business of healthcare spending.

What happened with local Spanish healthcare companies? Did they have appropriate resources to take advantage of the opportunity to enter into this dynamic market? Between the 1960s and the 1980s, there was a dual business structure in the healthcare industries in Spain. On the one hand, there were large, mainly private, corporations that benefitted from official monopolies in strategic products like antibiotics and penicillin production (Puig 2009). On the other hand, there were small- and medium-sized labs specialising in market niches (such as parasitological remedies, nutritional and dermatological products, or the human plasma proteins industry) that operated with fewer regulations and relatively more freedom to establish alliances in technological knowledge transfer with foreign corporations (Fernández Pérez 2016).

Three of such medium-sized companies in the healthcare industries were Laboratorios Grifols (founded in 1940), Laboratorios Hubber (founded in 1951), and Almirall (founded in 1943). Oral sources and interviews with CEOs and managers who participated in the initial contact and alliances with Japanese businessmen and corporations have provided invaluable information that is not preserved in any other form, even in the companies' archives.[14] In the 1960s, the three laboratories were small- and medium-sized corporations with around 300 employees, almost no experience in direct investment abroad, and limited exports and productive capacity. All three established alliances, or commercial contacts, with European and North American businessmen and

companies in the 1960s in order to obtain exclusive commercial distribution agreements for new products in Spain. The three founders of the labs belonged to local associations or clubs, or had friends in their professional networks abroad, through which they had the opportunity to make contact with Japanese businessmen and Asian healthcare corporations: Hubber in 1965; Almirall after 1974; and Grifols between 1982 and 1998. At the beginning of their alliances, Hubber and Almirall aimed to promote their exports in Japan and other Asian countries, where only very few Spanish companies with Spanish support had the opportunity to establish regular commercial operations (e.g. Tabacos de Filipinas). Grifols aimed to learn how to operate in the global markets of the plasma industry and with that knowledge to expand its exports to Asian and American markets.

In all three cases, the Japanese managers transferred not just products, but also know-how and informal and formal training in different managerial cultures and practices (which favoured standardisation in communication and in procedures inside and outside the Spanish companies) and knowledge about 'who's who' and 'how to' in the global healthcare markets that the small labs lacked. The Spanish family owners and CEOs learnt about global strategy in a way no formal educational institution could teach them at the time in Spain. The technical and administrative staff, under the leadership of these family owners, became familiar with Japanese and North American organisational, legal, and financial procedures that they needed to achieve the family owners' targets: first to grow in scale and scope and then to invest abroad. In this process, cultural hybridisation took place because the size, the market, and the procedures of the Spanish companies followed practices of a late-developing economy with a high degree of informality and a lack of standardisation (interviews with Antonio Gallardo Ballart and Víctor Grifols Roura). In all three cases, the Spanish managers learnt, above all, how to behave like international companies outside Spain.

The founders and the managerial staff of the three labs had had previous contacts in US, French, and German corporations and the first technical and administrative managers and workers had slowly introduced new procedures. The labs were not completely ignorant about the technical, administrative, and managerial procedures of large foreign corporations in developed countries. However, only the establishment of regular formal commercial and technical agreements with foreign corporations made the technical managers, the administrative staff, and the sales agents and representatives change their internal organisation and their long-term strategies for investment, growth, and commercial distribution in the dynamic and expanding national market.

In this context, Japanese companies contributed to training the top managers of the three Spanish labs to handle international operations in global healthcare markets, to forge long-term international agreements, to be confident about their capabilities for entering other Western European and non-European markets, and to obtain long-term loans to do so from large industrial banks and financial institutions.

Experiences of failure and success in Japanese–Spanish alliances in the healthcare industries

The cooperation or alliance with Japanese healthcare companies did not prevent business failure in the case of the company Hubber, but were a key factor to understand short-term and long-term spillovers in the organization and strategies of production, distribution, and management of the Spanish firms Almirall, and Grifols. Japanese knowledge and networks helped the small Spanish labs to grow in scale and scope, and change their organization to create manageurial structures and employees adapted to the tough requirements of knowledge intensive global markets like the global plasma industry and

the pharmaceutical industries were, in Asia, the United States, and leading Western European health care markets like Germany, and Switzerland.

Hubber was founded in Barcelona in 1951 by Félix Gallardo (1914–1985).[15] In 1965, Japan allowed the import of human plasma products from Europe into its market for the first time. Félix Gallardo's political connections in the Spanish government allowed him to establish contacts with ~~in~~ the Department of Biology of Osaka University (Professors Kamahora and Okuno), where Hubber plasma products were examined before the Japanese government approved their import. The Japanese director of haematology at the National Health Institute of Japan, Dr Yoichi Ichikawa, visited Hubber manufacturing facilities in Barcelona. The contracts to buy Hubber proteins derived from human plasma resulted in the first European export of human plasma to Japan by Hubber on 1 May 1965.[16] Hubber registered many patents (six in 1976, one in 1977, and 16 in the 1980s) linked to the production of human albumin and immunoglobulin, two key drivers in the plasma industry in the 1960s–1980s.[17] In 1987, Spain needed to import factor VIII (a product derived from human plasma protein and used in the treatment of haemophiliacs) from the United States for an annual value that was on average around 1300 million Spanish pesetas. Human plasma protein sales represented half of Hubber's total sales. In 1965, *La Vanguardia Española* indicated that it was extremely important to have contacts in the Spanish Ministry of Health in order to be included in development plans, to benefit from subsidies that would allow for the internationalisation of Hubber in. The exports of Spanish human plasma proteins to Japan required that Hubber had ~~distinguished~~ scientists with high quality standards and reputation as permanent employees, and an innovation department and quality control routines, to meet Japanese high quality standards required to foreign health products imports into Japan. (interview with Víctor Grifols Roura, 13 February 2015). Japanese requirements had clear spill-

overs, in the modernization of the organization and the management of innovation and research activities of Hubber.

Spill-overs in the organization of international activities and agents in Asia came with the commercial relationship of the Spanish Almirall firm and Japanese commercial agents in Europe initiated in the late 1960s. The top management in Almirall acquired practical training in how to deal with the Asian health care markets, that embedded in their organization an intangible know how difficult to obtain in the backward Spain of the 1970s. Antonio Gallardo Carrera (1908–1988), founder of Laboratorios Almirall in Barcelona in 1943~~. He~~ was, like Félix Gallardo (his brother and Hubber´s founder), a businessman living in Barcelona, a city with talented biopharmaceutical scientists and with an early incubator for healthcare start-ups formed informally around the Faculties of Medicine, Biology, and Pharmacy of the University of Barcelona. Antonio worked for Air France in the 1930s until he joined forces with the pharmacist Víctor Almirall to establish Laboratorios Almirall. The founder's sons, Antonio and Jorge Gallardo Ballart, joined their father in the 1960s after studying foreign languages in English schools during the 1950s, something which was considered by the founder to be essential for the family business (Canosa 2014). Between 1943 and 1978, the focus was on increasing production and innovation activities. The sons were involved in trips to Central American countries in the 1960s, visiting Guatemala, El Salvador, Honduras, Nicaragua, and Panama and selling antibiotics and cough treatments (interview with Antonio Gallardo Ballart in Barcelona, 19 June 2014). There were not many sales made during those trips. The big change came after the family met around 1968 a Japanese entrepreneur, well acquainted with Japanese sogo shoshas involved in the commercialization of Japanese pharmaceutical products, named Mr Okamura~~.~~ At that time, Gallardo Carrera was president of the SKAL Club in Barcelona (www.skal.org), which promoted international

tourism and organised congresses in different cities around the world. The club, founded in 1934, was run by travel agents from Paris to encourage international cooperation and friendship in the tourist and transportation sectors. In one congress, the Gallardo family met Okamura, who spoke several different languages, and who started working for their lab around 1968–1970 (interview with Antonio Gallardo Ballart in Barcelona, 19 June 2014). According to Antonio Gallardo Ballart, with Okamura, Almirall was able to establish contacts in important international companies and to focus on what would become the target of modern pharmaceutical laboratories: product license contracts. These contracts allowed third parties in agreed countries to produce a specific product (developed and patented by another company in a different country) under specific process requirements. Okamura trained and helped the Gallardo family in the world of these contracts, which were the key to entering the global pharmaceutical market in Asia. In the US, it was much more common to enter through alliances and joint ventures (interviews with Antonio Gallardo Ballart and Víctor Grifols Roura).

Their Japanese commercial contact with Japanese health care sogo shoshas visited pharmaceutical companies in Asia and other countries that had products to offer. Almirall selected products of interest from those their Japanese agent brought from his trips and signed license agreements for their manufacture. According to Almirall, at the beginning of the 1970s, the contracts involved Japanese products to be sold in Spain, and by the end of the 1970s and after the 1980s, they involved Almirall products to be sold in Asia. Almirall had accelerated the creation of new factories and new innovation departments to register and patent its own innovations whose licenses were sold to third parties.[18] The training in licence agreements and the networks established with Japanese corporations paved the way to the sale of the first Almirall product in Japan (Cleboril). This training and networking also paved the way to investments in the 1970s in new factories in Spain

where the licensed Japanese products were to be produced, together with Almirall's own innovative products that were sold through licences to other companies. The Japanese also provided know-how about Korea. Trips by the Gallardo brothers to establish contacts in South Korean corporations and to sell Spanish products under licence agreements in Korea began in the 1970s with the intermediation of Japanese partners. Meiji and Dai Nippon were two Japanese corporations that the Gallardo family established enduring relations with during those years and up until today (interview with Antonio Gallardo Ballart, 19 June 2015). As we will see next in the case of Grifols, business links in the 1970s were coupled with personal links and trips during the 1970s and 1980s that transformed into family friendships and a long-standing Spanish–Japanese alliance of considerable resilience and mutual profit (interview with Antonio Gallardo Ballart, 19 June 2015).

The available sources provide little descriptive information about what happened in terms of formal long-term spillovers derived from the alliance between the Japanese and the Hubber and Almirall laboratories, though qualitatively speaking the Spanish lab owners of Almirall acknowledge that the alliance provided informal knowledge and contacts they did not have about products and companies in the pharmaceutical markets of Asia, which lasted for decades. The company adapted their commercial strategies and organization to global culturally distant markets, with the strategic support of hybrid managers trained in cross-cultural management outside business schools, in international meetings where different business cultures had regular contacts, like the Ska meetings. International forums were a pool of hybrid managers from which people with knowledge of Western European, and Asian business cultures, could establish a productive and long-term cultural understanding, and collaborative commercial relationships. Long-term cultural understanding, and commercial collaboration, was also established through

hybrid managers trained in international congresses and forums in the case of the Grifols corporation. As in the case of Almirall, in Grifols cooperation of Spanish with Japanese managers that had previous training in how to handle differences in business cultures played a key role to transfer innovations and change organization of the productive routines, financial operations, and the training of human resources.

Today, Grifols is one of the top three global players in the plasma industry.[19] In 1982, when the Japanese Green Cross Corporation (GCC) initiated a partnership with Grifols, its owner Hikosuke Yorihiro (Ike) did not expect that the small family-run Spanish lab would ever become a big global player.[20] In the 1980s Green Cross controlled half of the Japanese market of blood derivatives while the North American Baxter corporation had around 20 per cent of the Japanese market. In 1978 Green Cross acquired Abbott Scientific Products (a division of Abbott Laboratories, who had acquired Courtland Laboratories and their 1950 license to manufacture plasma in 1967) (Bertolini, Goss, Curlin 2013). It was therefore a giant pioneering US firm in the plasma industry acquired by a giant pioneering Japanese firm in the same industry, the ones with which the small firm Grifols (also a pioneer in Spain in the plasma industry) sealed a joint venture in 1982. For an outsider, the future could well have been that those giants could have finally make disappear the small Spanish firm after using it to enter the European markets. The future, however, would be that Grifols would later buy Alpha and its subsidiaries in Europe, something nobody could have imagined in 1982. That year, GCC's North American subsidiary (Alpha Therapeutic Corporation (ATC)) was, according to Grifols CEO Víctor Grifols Roura, 52 times bigger than Grifols in production capacity and sales: what Grifols produced with plasma fractionation in Spain in one year, ATC produced in a single week.[21] ATC was established in 1978–1979 after the Japanese GCC bought the scientific division of the old Abbott Laboratories in Los

Angeles for around 50 million US dollars.[22] GCC, a leader in the plasma industry in Asia, had been founded by the controversial Dr Ryoichi Naito in the early 1950s and was linked in its origins (as in the case of Grifols) to the establishment of a pioneering blood bank after the great wars of the first half of the twentieth century. Naito and Grifols therefore shared common scientific and entrepreneurial origins, despite their different business volume and company size. In 1982, when the shareholders' agreement and the joint venture agreements were signed, Grifols had only 342 employees and no commercial or productive investments abroad. The first subsidiary was created in Portugal in 1988; the Miami office and subsidiaries in Chile and Argentina were opened in 1990; subsidiaries in the Czech Republic and Mexico were opened in 1992; and in 1997, ATC sold its subsidiaries in Germany, the United Kingdom, and Italy to Grifols and Grifols International was founded. The partnership came to an end in 1998 and Grifols emerged from it as one of the largest European plasma manufacturers, with 1347 employees and subsidiaries in the big German and UK markets and in the most relevant Latin American markets.[23] The alliance provided short-term and long-term spill overs. ATC provided strategic lessons in finances and technology, as well as know-how about the regulation of the US pharmaceutical market and about international operations in the global plasma industry. These lessons needed a new organization, and a global-looking new type of managers in the firm. The US partner required accounts to be made following US standards, quality controls following US standards, a commercial routine following US standards, and production facilities organized as much as possible following closely the organization of US production facilities. Old managers retired, young managers were hired, and strong communication with the US partners established with frequent trips across the Atlantic to make sure that the new way of doing things guaranteed growth in scale, scope, and quality, the three targets of any large health care corporation operating

in the United States. The Japanese of the Green Cross had bought their US subsidiary in 1978, and they had had the time to learn how to adapt their structures, strategies, and managers, to the US requirements. When they sealed an alliance with the Spanish firm Grifols in 1982, the Japanese were excellent teachers with recent know-how about what changes a foreign company from the periphery of Eurasia had to undertake in their structure to be accepted as a new player in the US market.

According to Víctor Grifols Roura, Grifols CEO and son of the lab's founder, ATC helped considerably, first of all, in financial terms, by introducing the Grifols top managers to all the large banks with which the Japanese GCC had agreements. In the early 1980s, Grifols needed a lot of money and long-term loans to carry out its internationalisation plans. The Spanish state was not a good source of funds since it usually paid the invoices of pharmaceutical suppliers in the public healthcare system with a one-and-a-half year delay, and the pharmaceutical companies complained during the 1960s and the 1980s (and still do) about the large amounts of money needed for current expenses such as production inputs and salaries for qualified employees. The Japanese partners guaranteed good connections with Japanese banks and long-term loans for their new Spanish partners; loans that were much needed when after 1983 Grifols increased its activity in exports and direct investment in Europe, Asia, and America. The new situation made Spanish staff learn how to negotiate with Japanese banks and financial institutions.

Second, in terms of technology, Grifols' staff significantly improved their know how in quality control. They had initiated this knowledge fromt heir previous alliances and partnerships with US healthcare corporations (Dade Reagents and American Hospital Supply) between 1961 and 1982 Quality control congresses, quality control departments, and specialised professional quality control staff had been introduced as routine elements in Grifols before 1982. Quality was very important in the design of the US-style factory

built brand new in Spain (Parets del Vallès) in the early 1970s. The partnership with Alpha Therapeutic Corporation, the US subsidiary of the Japanese Green Cross Corporation, provided new assets: Grifols technical managers and workers had access to Japanese technology that helped them develop new products (double-inactivated factor VIII, Criostat SD-2, and Flebogamma's liquid intravenous immunoglobulin), capital to expand capacity, and know how about how to follow strict Food and Drug Administration rules to obtain licenses with which to sell in the US market. Sales in the US market provided resources to increase innovation in a scale that was unknown to the small Spanish lab.

During the 1980s the scandals relating to contaminated blood products and AIDS victims, that affected particularly Japan and Germany, and a few corporations like Green Cross that were late in adopting new methods to heat treat blood products, did not affect Grifols and their partner Alpha Therapeutic Corporation. Grifols started its alliance with Alpha in 1982, before news about the AIDS started to spread from the US authorities, and before significant knowledge about it was communicated by health authorities in the Western world and Japan. Grifols´partner Alpha was as a US firm, and always followed in the US market the rules and recommendations of the Food and Drug Administration. More important than that, Grifols was the first Spanish laboratory that manufactured heated plasma derivatives like the Factor VIII (Criostat HT) as early as 1984, more advanced than most Japanese plasma derivatives manufacturers like Green Cross Corporation. Grifols archive have hundreds of documents that showed they had updated knowledge about news about the new methods and recommendations that North American authorities disseminated among health authorities all the world, to prevent contamination of blood products, and Grifols very strictly and in a pioneering way introduced heat treated plasma products in Spain before Spanish law required to do so, to

reduce the possibility of contamination of its products (Grifols Historical Archive in Barcelona/GHAB and Grifols 2015). [24]

The strict quality methods followed in Grifols, and the creation of an organization designed for quality innovation in the plasma industry, following recommendations of their US/Japanese partners in Alpha Therapeutic Corporation, yielded positive short term and long term spill overs. By 1994, sales in foreign markets represented 25% of Grifols' total income, with exports doubling since 1993 and quadrupling since 1992 (Grifols 2015: 97). In 1990, the president and CEO of ATC, Hikosuke Yorihiro, authorised Grifols to establish a distribution company for the Latin American market, with the exception of Brazil which was reserved for ATC's own operations. In coordination with ATC managers, Grifols sales staff learnt how to use their networks in Spain and abroad to find reliable local technical and legal partners in Chile, Argentina, and Mexico, to learn local regulations on pharmaceutical products and local administrative and trade regulations, and to overcome the liability of foreignness. They also learnt to design and modify a policy for expatriates, which served as a new human resources policy to handle international operations in the new markets.

The Japanese managers in ATC and in GCC also taught the top management in Grifols about mergers and acquisitions in the global plasma industry, and about the importance of sharing a similar business culture to find the right reliable partner in global operations. In 1997, ATC had financial difficulties with its European subsidiaries in Germany, Italy, and the United Kingdom, and the directors of GCC offered Grifols the option of purchasing them. The proposal was not supported by the US directors of ATC, who saw the direct relationship between the Spanish Grifols and the Japanese GCC as a threat (Grifols 2015: 100; interview by the author with Víctor Grifols Roura, 13 February 2015; interview by Rosa Avellà with Hikosuke Yorihiro in 2009). But from the Japanese

perspective, the threat lay in selling the subsidiaries to North American companies rather than to Spanish companies. For the Japanese president and CEO of ATC, North American managers moved a lot from one company to another and relationships were not stable over time, whereas the Japanese staff met and had negotiations with the same people in Grifols over the course of many years. The Japanese managers of ATC and GCC also appreciated the Spanish Grifols' 'ethical philosophy, and good practice, legal issue also. People had in mind how to grow, how to make a profit with a very steady, steady attitude. That's the most important attitude for a pharmaceutical company. So as in GCC or ATC.'[25]

The alliance with the Japanese therefore had multiple spillovers in the short term. For the Spanish, it facilitated the immediate acquisition of strategic financial resources, technical expertise, and commercial know-how in global markets in the blood manufacturing industries. The joint venture between Grifols and ATC was interesting for the Japanese-owned US subsidiary since it could use a Spanish-based corporation to introduce products through Spain into other European markets where it still did not have subsidiaries. It also helped ATC gain access to Spanish-speaking South American markets and the Chinese market (which was not easy for Japanese companies to enter during that period).

The Japanese and the Spanish liked each other . Both had respect for meritocracy, both shared a long-term vision of their plasma businesses, both disliked dividend policies that prioritised short-term goals over long-term technical and business objectives, and both had long-term employment policies that made it possible to handle difficulties and strategies with the same people on the top and in the middle ranks of the factories and the administration over the years. They liked stability and hated seeing changing faces in control of the labs and the company (interviews by the author with Víctor Grifols Roura

in 2015 and by Rosa Avellà with Hikosuke Yorihiro in 2009, with transcript available in the Grifols Museum, Barcelona). Grifols could begin its first exports to China in 1983–1985 thanks to agreements with the Japanese GCC via its US subsidiary ATC. Grifols also obtained contacts and training in global finance and global banking for its long-term industrial plans for expansion and innovation. The Japanese gave Grifols precious knowledge about how to negotiate with the North American FDA in order to gain licences to be able to produce authorised products for the North American market in Spain (first in 1995). Moreover, the Japanese prioritised their Spanish partners as a first option when they needed to sell ATC's European subsidiaries in Germany, the UK, and Italy.

These spillovers were instrumental in helping Grifols become a global player in the plasma industry. In the long term, there were other 'delayed' spillovers that an external observer could easily link to the lessons obtained by Grifols employees from their Japanese partners. Grifols had learnt from the Japanese how to organise a global workforce in an innovative high-tech industry across continents in a professional way. It had learnt how the Japanese organised their expatriates, how they chose their local partners and according to what priority values and criteria, and the importance they placed on continuous research and training. Grifols also shared with the Japanese their belief in the stability of employees in the company as a valuable asset for guaranteeing quality (particularly relevant after merger and acquisition operations). The Japanese travelled a lot and they believed in the importance of continuous trips by managers between subsidiaries and factories to make knowledge flow and to set common priorities, values, and procedures. Japanese believed in partnering corporations with strong shared values, despite the difficulties of working in a global market and have a fragmented workforce. Grifols decided to make use of many of these lessons after it bought several companies in the US in the first decade of the twenty-first century and had formed a team of more

than 4000 employees there. It was crucial, as they learnt from the Japanese, to create a common identity, shared values, shared ethics, and shared quality control procedures, particularly in a high-tech healthcare industry like the plasma industry, where any small problem in a blood sample could lead to the collapse of the whole company.

Grifols decided to develop these shared elements through the creation of two formal education centres whose goals are to train the company's global workforce in a standardised way and to create common priority values, techniques, and knowledge much needed in the factories and establishments that Grifols has all over the world. These centres, established to protect and disseminate quality control and values across Grifols' 13,000 employees, are the Grifols Academy of Plasmapheresis, opened in Glendale, Arizona, in 2009 (with another facility in Indianapolis and satellite locations in Atlanta, GA; Cincinnati, OH; Colorado Springs, CO; Los Angeles, CA; Raleigh, NC; San Marcos, TX; and Seattle, WA) and the Academia Grifols, opened in Parets del Vallès in 2011.[26] In the academies' *Annual Report 2012*, Grifols president and CEO, Víctor Grifols Roura, wrote that 'our goal is to have a workforce of people who take a personal approach and have the professional skills that enable them to build a long professional career at Grifols' (Grifols Academy *Annual Report 2012*: 3).

The Grifols academies aim to train the workforce in the standard practices learnt from the US and Japan during the previous decades. They were not an immediate local outcome in Spain derived from the activity of the Japanese businesses. The case of the Grifols academies suggests that multinationals' spillovers can be of a long-term and delayed nature and can take place far from the host economy, particularly when the firm becomes a global player in a global industry, as has been the case of Grifols. Its North American and Japanese partners (since 1961 and 1982 respectively) transferred not just innovative products and technology to the Spanish lab, but also a commitment to ethical

values, the professionalisation of quality control, and a strong awareness of the need for continuous training when a small company becomes a large global corporation in a sensitive healthcare industry. When Grifols' workforce grew from around 300 employees in the 1970s to more than 1000 in the 1980s, the strict US and Japanese training courses and quality procedures in the Spanish company created a clear awareness among its managers and the workforce of the need to standardise training practices and quality control.

It was to be expected that once Grifols ceased to have US and Japanese partners (in 1982 and 1998 respectively) that it would put the lessons learnt into practice. Grifols managerial and technical staff had learnt how to obtain financial resources in global markets, how to identify interesting mergers and acquisitions in the world, and how to organise a global workforce with very different original business cultures. One could ask why Grifols did not invest more in its home country. Maybe it could have diversified into related businesses and employed more Spanish people in factories not related to the plasma industry. A reading of the last book by Alfred D. Chandler about the shaping of the modern pharmaceutical industries may help to provide some answers. Chandler indicates that history has shown that most of the big pharmaceutical companies that pioneered market niches in the first third of the twentieth century and diversified later failed and were sold, whereas the most successful stories of endurance are those of large companies that invested in renewed innovation and research in their original market niche. This is the pathway chosen by Grifols, which has always remained within the plasma industry. Spain is a small market and therefore the only way to grow is by expanding into global markets, with the consequences that this often entails: investment outside the domestic market and the creation of spillovers far from home.

Final remarks

International business theory has published much about traditional North–South alliances and knowledge transfer, and more recently about reverse innovation experiences in South–North FDI. However, almost nothing has been said about the potential relevance of East–West peripheral alliances for the transfer of knowledge, resources, and capabilities, and thus the reduction of knowledge gaps with the North in the early stages of South–North FDI. The three cases analysed in this study (particularly the case of Grifols for which more abundant information is available) are all alliances between Japanese and Spanish corporations in the healthcare industries. The three Spanish labs, two of which have endured (Grifols and Almirall) while one dissolved (Hubber), began to internationalise their activities during the 1960s–1980s. These cases, though limited, suggest that Japan (a peripheral economy with early experiences in learning transfer from the North and difficulties in investing in developed economies in the 1950s–1960s) had accumulated internationalisation experience that it could offer in its agreements with other peripheral economies attempting to learn how to become global players, as happened with Spain.

Japan sold surplus production to backward Spain in the 1960s–1980s since at the time it had few entry barriers to foreign products, in contrast with the tough entry barriers to foreign and particularly Asian products in existence in Germany, France, or the US. Spain and Japan needed each other for other more intangible reasons. Spain was useful for absorbing surplus industry products and at the same time served as a bridge by which Japan could reduce its liability of outsidership in order to enter South American markets, Central and Eastern European markets, and even China; areas where the Japanese faced many difficulties. The Spanish had close cultural and/or geographical proximity with most of these markets and had no diplomatic problems with China (as Japan had due to

previous conflicts). The Spanish could sell Japan's surplus industrial products in these markets and help the Japanese grow in scale and scope to advance their position in developed markets. On the other hand, the Spanish companies that successfully forged alliances with Japanese firms obtained not just high-tech Japanese products, but above all updated, standardised, and simplified technological and organisational knowledge, Japanese know-how about global financial markets (helping finance long-term Spanish industrial investments), and accumulated capabilities and experience in how to overcome obstacles to entering the developed economies of the world such as Germany, the UK, France, or the US. The three cases provide lessons about these early mutually profitable East–West alliances, which helped the partners advance in the globalisation of their peripheral economies. The study also suggests that future research should explore the role of culturally hybrid managers in facilitating successful connections between the extremely different East–West business cultures within partnerships or merged companies.

In terms of human capital, how many individuals were exposed to the new knowledge? Did it involve organisational changes? What about training and recruitment patterns and associated institutions? How many culturally hybrid managers have been identified? Answers must necessarily be of a rather qualitative kind, since most Spanish healthcare corporations have not preserved complete archival records of their human resources departments and the reliability of oral sources is not always easy to test. The case of Grifols, for which a variety of oral testimonies from managers and archival material has been gathered, reveals that the alliance (1982–1998) with Alpha Therapeutic Corporation (the US subsidiary of the Japanese Green Cross Corporation), has been acknowledged by Grifols CEOs and staff as being of extraordinary importance for the transformation of the Spanish corporation into a global player. This process of

internationalisation involved a growing workforce (from 340 employees before the alliance to 1,347 at the end of the alliance, and more than 13,000 employees across the world today) and staff training in new technical and financial knowledge, as well as operational knowledge of global markets, obtained from ATC and transferred to the Spanish managers and technical staff.

The Japanese managers and technical staff from ATC and GCC taught Grifols about the importance of continuous and regular investment in workforce training in a global company. The Japanese and the Spanish CEOs and presidents believed that this training had to include not just technical knowledge, but ethical values that were extremely important in the plasma industry. There were ATC managers and technical staff that moved to Spain to work and learn in the Grifols factory and offices, and Spanish managers and technical staff that regularly travelled to ATC's factories and offices in the US. This article suggests that a delayed spillover could well be behind the creation of the Grifols Academy of Plasmapheresis in the United States in 2009 and the Academia Grifols in Spain in 2011, long after the alliance had ended. The objective of both is to provide a suitable framework within which thousands of Grifols employees working across the world in its different factories, donor centres, and offices can share knowledge and experiences and learn common ethical values about the activities that underpin the plasma industry in ways they could not in conventional training centres. Today, Grifols employs some 13,000 people worldwide and the Grifols academies have consolidated their training courses and the use of museums and history books to spread shared knowledge and values among the company's multicultural workforce.[27]

References

Primary sources

Interviews and correspondence:

- Interview by the author with Eduardo Herrero, Barcelona, 9 December 2013.
- Telephone interview by the author with Carmen Gallardo, 18 June 2014.
- Interview by the author with Antonio Gallardo Ballart, Barcelona, 18 June 2014.
- Interview by the author with Víctor Grifols Roura, Sant Cugat del Vallés, 13 February 2015.
- Interviews by the author with Federico Lanzaco, former vice president of Acerinox, and Victoriano Muñoz, former CEO of Acerinox, Madrid, May 2013.
- Correspondence between the author and Yoshitaka Kishimoto, former CEO of Nissho Iwai Corporation, 23 February 2013.

Grifols Private Archive, Grifols Museum, Barcelona:

* Shareholders' Agreement between Alpha Therapeutic Corporation and Laboratorios Grifols S.A., 30 October 1982.

* Transcripts of interviews by Rosa Avellá with Hikosuke Yorihiro (former CEO of Alpha Therapeutic Corporation), Montserrat Vinyals, and Guillermo Anido, 2009 (no day or month provided in the transcript).

* Minutes of the meetings of the Board of Shareholders of Laboratorios Grifols 1940–1964.

* Correspondence.

* Internal bulletins from company magazine (*Cosmos*), several years.

* Notarial records: constitution of companies.

* Articles and documents about blood contaminated products, AIDS victims, and methods to prevent them in Spain, the US, Japan, France, the UK, Germany, Australia, in the years 1981-1990: ID Knosys 6821, 3917, 3780,3962,3968,3564,3767,3786,3784,3766,3769,3774,2697,3966,3765, 2705, 2680.

Grifols Private Archive, Sant Cugat del Vallés (Spanish headquarters):

* Minutes of the meetings of the Board of Shareholders of Laboratorios Grifols, 1965–1998.

General Archive of the University of Navarra, Antonio Garrigues Díaz Cañabate Collection:

- On negotiations for the entry of Spain into the EEC, 14 November 1962.

Federico Lanzaco's Personal Archive, Madrid:

- Typewritten bound notes about the history of Acerinox.

Secondary sources

Abe, T. "Trade conflict between Western Europe and Japan in the late 20th century." *Entreprises et Histoire* 80 (2015): 13–35.

Bertolini, J., N. Goss, and J. Curlin editors. *Production of Plasma Proteins for Therapeutic Use*. Hoboken: John Wiley Sons, 2013.

Buckley, P. J., and P. Fernández Pérez. "The Role of History in International Business in Southern Europe." *Journal of Evolutionary Studies in Business* 2, no. 1 (2016): 1–13.

Calvo, A. *Telecomunicaciones y el nuevo mundo digital en España: La aportación de Standard Eléctrica*. Barcelona: Ariel, 2014.

Cano-Kollmann, M., J. Cantwell, Th. J. Hannigan, R. Mudambi, and J. Song. "Knowledge connectivity: An agenda for innovation research in international business." *Journal of International Business Studies* 47 (2016): 255–262.

Canosa, F. "Almirall. La salud despegó." In *Capitanes de Industria*, edited by F. Canosa, 169–175. Barcelona: Mobil books, 2014.

Cantwell, J. "El ascenso de las empresas multinacionales innovadoras." *Economistas: Colegio de Economistas de Madrid* 137 (2013): 6–13.

Carreras, A. and Tafunell, X. *Historia económica de la España contemporánea.* Barcelona: Crítica, 2003.

Casanova, L. "Latin American multinationals facing the 'new reality.'" In *Evolution of Family Business: Continuity and Change in Latin America and Spain*, edited by P. Fernández Pérez and A. Lluch, 23–36. Cheltenham UK and Northampton MA: Edward Elgar, 2016.

Chandler, A. Jr. *Shaping the Industrial Century. The Remarkable Story of the Evolution of the Modern Chemical and Pharmaceutical Industries*. Harvard: Harvard University Press, 2009.

Eisenhardt, Kathleen M. (1989). "Building Theories from Case Study Research." *The Academy of Management Review*, Vol. 14, No. 4: 532-550.

Eisenhardt, Kathleen M. and Melissa E. Graebner (2007) "Theory building from cases: Opportunities and challenges." *Academy of Management Journal*, Vol. 50, No. 1: 25-32.

European Federation of Pharmaceutical Industries and Associations (EPFIA). *The Pharmaceutical Industry in Figures: Key Data 2014.* EFPIA website. Accessed November 13, 2013.

Feldman, E.A., R. Bayer, eds. *Blood Feuds: AIDS, Blood and the Politics of Medical Disaster.* Oxford: Oxford University Press, 1999.

Fernández Pérez, P. "Acerinox: a successful joint-venture in Southern Europe." *Entreprises et Histoire* 80, special issue *Relations Europe-Japon* (2015): 57–83.

Fernández Pérez, P. "Laboratorios Andrómaco: Origins of the First Subsidiary of a Spanish Pharmaceutical Multinational in the United States (1928–1946)."*Journal of Evolutionary Studies in Business* 2, no. 1 (2016): 266–275.

Fridenson, P. "Japanese-French business encounters since 1952: two opposite relations." *Entreprises et Histoire* 80 (2015): 36–56.

Grifols. *When a Dream Comes True: An Illustrated History of 75 Years of Grifols*. Barcelona: Grifols, 2015.

Grifols Academy of Plasmapheresis/Academia Grifols. *Annual Report.* Barcelona, Grifols website, 2009, 2010, 2011, 2012, 2013, 2014, and 2015.

Guillén, M., and E. García-Canal. *Emerging Markets Rule: Growth Strategies of the New Global Giants.* Mac Graw Hill, 2013.

Jackson, T. (2015). "International HRM: A cross-cultural perspective." In *Companion to International Human Resource Management*, edited by David G. Collings, Geoffrey Wood and Paula Caligiuri, 138-152. Abingdon: Routledge.

JETRO. Survey: Japanese Manufacturing Affiliates in Europe and Turkey. JETRO, 2010.

Khana, Tarun, Jaeyong Song, and Kyungmook Lee. (2011). "The paradox of Samsung's rise." *Harvard Business Review* 89, Nos. 7-8 (July–August): 142–147.

Kabushiki kaisha Midori juji, Midori juji 30 nen shi, Osaka: Kabushiki kaisha Midori juji, 1980 (in Japanese: 『ミドリ十字３０年史』株式会社ミドリ十字，大阪，１９８０年)

Kudo, A. "Economic relations between Japan and East Germany: the developing relationship of Kureha Kagaku and Carl Zeiss Jena after the first oil crisis." *Entreprises et Histoire* 80 (2015): 84–113.

Ministerio de Sanidad y Seguridad Social. *Necesidades Sanitarias y Recursos Asistenciales.* Madrid: Instituto Nacional de la Salud y Ministerio de Sanidad y Seguridad Social, 1977.

Miravitlles, P., and Zhang, Y. Y. "Six Decades of International Business Research. Where Next?" *Journal of Evolutionary Business Studies* 1, no. 1 (2016): 63–94. http://revistes.ub.edu/index.php/JESB/article/view/j005. Accessed May 18, 2016.

Ohno, Kenichi. *The Path Travelled by Japan as a Developing Country: Economic Growth from Edo to Hisei*. Tokyo: GRIPS Development Forum, 2006.

Pelegrín, À., and A. Jensana. *Economía de Japón*. Barcelona: UOC, 2011.

Puig, N. "Almirall" in *Cien empresarios catalanes*, edited by F. Cabana. Madrid: LID, 2006.

Sáez, M., and P. Díaz. "The European Response to the Challenge of the Japanese Steel Industry (1950-1980)." *Business History* 58, no. 2 (2016): 244–263.

Schröter, H. "Japanese-European business encounters during the second half of the 20th century." *Entreprises et Histoire* 80 (2015): 5–12.

Shacho Kai. *Las empresas japonesas en España. Estudio y evaluación sobre su contribución a la gestión empresarial*. Madrid: Shacho Kai, 2014.

Umemura, M. "Rethinking innovative competences at the technological frontier: the Japanese and British experience in regenerative medicine." *Entreprises et Histoire* 80 (2015): 114–133.

Wada, K. "Why did Toyota respond less quickly to globalisation?" *Entreprises et Histoire* 80 (2015): 134–154.

Zachary Taylor, M. *The politics of innovation. Why some countries are better than others at science and technology*. Oxford: Oxford University Press, 2016.

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[2] Historical Archive Museu Grifols in Barcelona. Actas Laboratorios Grifols 1940-1964, Ref. 2176. Grifols Corporate Archive in Sant Cugat del Vallés, Actas Laboratorios Grifols 1965-1987, Ref. 2176, 03752, 1213, 1233, 3245, 1424, 2176. And Interview to Victor Grifols Roura, 13 February 2015; and transcript of interview to Hikosuke yorihiro by Rosa Avella in 2009 in Historical Archive Museu Grifols in Barcelona.

[3] World Trade Organization indicates that no World Trade Organization definition of Developed and Developing countries exist, and that WTO membres are the ones that announce for themselves whether they are developed, or developing countries. WTO Agreements provide developing countries with longer transition periods and can receive technical assistance (www.wto.org, access 14 February 2017)

[4] Conferences, ID Knosys 952, 1047, 1048, 933, 2660, 2356, 2358, 2351, 2352, 2353, 2354, 2355. Historical Archive Grifols in Barcelona

[5] There is no published academic research about Hubber, but a variety of abundant news in Spanish newspapers, some of them like La Vanguardia, ABC, El Pais, today digitalized and used for this study, to elaborate a biographical and entrepreneurial approach to the founder of Hubber Felix Gallardo, and the key stages in the rise, success, and decline of his company. There are published biographies by Nuria Puig about the founder of Almirall and his sons, the Gallardo family (Cabana 2006), and also digitalized news in the media mentioned above that have been used for this paper. See references.

[6] Generous and continuous support for this research is acknowledged from Mr Víctor Grifols Roura, Nuria Pascual, Eduardo Herrero, and Rosa Avellà from the Grifols corporation.

[7] Nuria Puig has published historical biographies about founders and members of outstanding Catalan laboratories like Almirall, Ferrer, Esteve, and Uriach, in Cabana 2006.

[8] The sources for Hubber have mainly been digitalised historical press available online (*La Vanguardia Española* and *La Vanguardia*) between 1965 and 1979 and a phone interview by the author with Hubber's founder's daughter, Carmen Gallardo, on 18 June 2014. The Almirall sources were: an interview by the author with the son of founder Antonio Gallardo Carrera on 18 June 2014; Almirall's corporate website; digitalised historical press; and F. Canosa (2014). The sources for Grifols came from ongoing research in the private archives of the Grifols corporation where transcripts of interviews with Japanese partners are preserved, as well as an interview by the author with CEO Víctor Grifols Roura on 13 February 2015.

[9] According to responses to a questionnaire sent by the author via airmail to Yoshitaka Kishimoto (manager of Nissho Iwai Corp.), dated 23 February 2013, Kishimoto established himself in Germany in the early 1950s as a commercial representative of Japanese industrial corporations together with other Japanese representatives of *sogo shosha* that pioneered the entry of Japan into Western Europe after World War II and before direct industrial investment was made by Japanese industrial corporations in Europe (Fernández Pérez 2015; Pelegrín and Jensana 2011; Shacho Kai 2014).

[10] In 2010, a JETRO report from the Japanese Ministry of Finance and the Bank of Japan revealed that in 2009 there were 1083 Japanese industrial companies in Europe and Turkey; 819 in the Western countries and 264 in the Centre and the East. Most of the European industrial factories of Japanese corporations were concentrated in the UK (235), Germany (169), and France (111), whereas the Netherlands has been home to many headquarters of Japanese companies but no Japanese production facilities. Transport equipment companies accounted for 20.5% of the total of Japanese industrial companies in Europe (222), followed by machinery (156 companies: 14.4%), electrical, electronic, and ICT equipment (102 companies: 9.4%), and chemical industries (100 companies: 9.2%). Half of the productive facilities in Europe had innovation departments (Shacho Kai 2014: 64).

[11] Historical Archive of the Grifols Museum in Barcelona. Interview by Grifols Historical Archive manager Rosa Avellà in 2009 with former CEO of ATC, Hikosuke Yorihiro. Ongoing book on the dissemination of X-rays and the construction of hospitals in Japan by Pierre-Yves Donzé.

[12] Historical Museum Grifols in Barcelona. Transcript of Interview with Hikosuke Yorihiro by Rosa Avella in 2009. Hikosuke explanis that the origins of Alpha Therapeutic Corporation in Los Angeles was the acquisition by the Green Cross Corporation in 1975-78 of Scientific Division of Abbott Laboratories, with Japanese capital, and that the GCC Dr. Naito called him when Hikosuke was working in London for a bank, to be appointed first CEO of ATC in 1981. In 1982 Hikosuke started negotiations with Grifols, and that they soon established friendship and mutual trust, that the company Grifols was well appreciated for their long-term vision, their estability in the management, and the ethics of the employees, which gave them trust in them.

[13] Data prepared using European Federation of Pharmaceutical Industries and Associations (EFPIA). *The Pharmaceutical Industry in Figures: Key Data 2014*.

[14] The most significant empirical evidence on the instrumental role that contact with Japanese businessmen and corporations played in teaching these three companies about global healthcare markets are interviews with managers and CEOs who participated in events for which almost no written record has been preserved, even in the companies' archives. For Almirall, a long interview was undertaken by the author with Antonio Gallardo Ballart, son of the founder and CEO of the Landon Group (18 June 2014). For Hubber, a telephone interview was carried out by the author with Carmen Gallardo, daughter of the founder (18 June 2014). For Grifols, an interview was conducted by the author with CEO Víctor Grifols Roura, son of the founder of Laboratorios Grifols S.A. (13 February 2015), and use was made of the transcripts of interviews preserved in the Historical Archive of the Grifols Museum in Barcelona that were carried out by the Archive manager Rosa Avellà with: Hikosuke Yorihiro, CEO of ATC (2009); Montserrat Vinyals Vallesta, technical manager in Grifols in the period under analysis (4 May 1999); and Guillermo Anido Fraguío, the Cuban manager of American Hospital Supply and friend of the Grifols family who established the initial contact between GCC/ATC and Grifols after Víctor Grifols Roig asked him to intermediate on his behalf at a congress in Geneva. Secondary sources listed in the references at the end have provided additional information.

[15] Félix Gallardo had three daughters who did not continue with the management of the lab after their father's death (interview with Carmen Gallardo, 18 June 2015). He received a commercial and technical education (*Peritaje Mercantil*) and took courses on industrial organisation and business administration in France, Switzerland, and the United States. He was an officer in the army during the Civil War and earned a commission as an artillery officer. He was a real estate businessman and the founder and CEO of Hubber (*La Vanguardia Española*, 8 October 1966: 27). He assisted Mayor Porcioles at the time of rapid real estate construction in Barcelona in the 1960s and the 1970s. He was the brother of Antonio Gallardo Carrera who was president of Laboratorios Almirall. He started out in the pharmaceutical industry after publishing advertising for large pharmaceutical labs and he also became director of the Editorial de la Real Academia de Medicina de Barcelona, the Editorial de Publicaciones Médicas F. Gallardo, and the Editorial Cátedra Pediatria Facultad Medicina. He was CEO of Inmobiliaria Gallardo y Costa Canaria S.A., Hubber Farmacéutica Portuguesa, and Laboratorios Hubber, and advisor to the Banco Condal, Crédito y Docks, Turismo Insular, and Penibérica (www.a16-01.com/pdfs/CAU/1973/CAU730901062.pdf (accessed January 26, 2015). Félix Gallardo sold Hubber to the Spanish holding company Rumasa in 1979, when the sales of the lab were over 1200 million Spanish pesetas (*La Vanguardia*, 26 October 1979). According to interviews with Gallardo's relatives, he was seriously ill and decided to sell the lab at a very good price and at a very good time to protect the welfare of his daughters. He also took the decision due to the tragic death of his wife Carmen Marques Falguera in 1972, which made him leave politics, and due to a major crisis in the mid-1970s in Fomento del Trabajo Nacional, an association of large companies in Barcelona in which young entrepreneurs organised actions against Gallardo's dominance in the management of the association.

[16] *La Vanguardia Española*, 2 May 1965: 12.

[17] http://patentados.com/empresa/laboratorios-hubber-s-a (accessed January 26, 2015).

[18] Almirall opened the small lab in the Gracia district of Barcelona in 1943 and the first chemical factory in Sant Celoni in 1970. During the 1970s, there was an increase in the number of factories established (Sant Feliu de Llobregat, Sant Andreu de Barcelona, and Sant Just Desvern), followed by advancements in acquisitions abroad in the 1980s and beyond: interview with Antonio Gallardo Ballart and information from www.almirall.com.

[19] This research has been made possible through a confidentiality agreement signed with the Grifols corporation (20 January 2014), which on 30 January 2014 fully opened its private archive in the historical building on Jesus María Street in Barcelona for a period of a year and a half. Research funds to cover expenses related to this research and its dissemination in conferences have come from one of the first BBVA Foundation's Grants for Research in Socio-Economics, awarded in 2014. Private correspondence, internal bulletins, annual board minutes since 1940, transcripts of interviews by Grifols Archive staff with US, Japanese, and European former and current staff, albums of historical photographs, and the private historical books and journal collections of the corporation (one of the most important private companies specialised in the study and industry of plasma derivatives in Spain since the first third of the twentieth century) have been generously made available for this research. The two most important sources of information for this paper are these primary historical documents from the Grifols Archive in Barcelona (Jesus María Street) and from the Grifols headquarters in Sant Cugat, and specific people whose lives have been devoted to the Grifols corporation: the current CEO Víctor Grifols Roura (an interview of almost three hours in duration was conducted on 13 February 2015); finance manager Nuria Pascual (who provided historical statistics on financial data since 1975 plus contact with Rosa Avellà from the Grifols Museum in Barcelona, Mr Puga from the Communications Department, and Mr Eduardo Herrero from the Grifols Academy); and Rosa Avellà and Berta Miquel (excellent professionals providing constant assistance and support in the Grifols Museum in Barcelona). All errors that may appear are the author's sole responsibility. Following the confidentiality agreement signed with Grifols, this draft has been sent to Grifols for their knowledge and supervision, but all hypotheses, analyses, and interpretations are entirely the author's.

[20] On Green Cross, Kabushiki kaisha Midori juji 1980, in Japanese. I owe this reference to Pierre-Yves Donzé. There are abundant news in the internet in English about the biography of its founder, and the 1980s and 1990s scandals about how the company handled the beginning of the AIDS crisis in Japan, and the trials that affected some of their managers for this crisis. See also Feldman 1999 and Zachary Taylor 2016. The connection with Grifols started in 1982 accordin to the testimonies in note 12 in this article.

[21] The key sources of information on the lessons taught by GCC and its US subsidiary ATC to Grifols have been: an interview by the author with CEO Víctor Grifols Roura (13 February 2015); the last Grifols commemorative book (Grifols 2015, chapter "Global Horizons"); and documents from the Grifols Historical Archive in the Grifols Museum in Barcelona (particularly "Shareholders Agreement ATC/Grifols 1982", with attached notarial and financial documents; the transcript of the interview by Rosa Avellà with Hikosuke Yorihiro in 2009; and the transcript of the interview by Rosa Avellà with Dr Guillermo Anido Fraguío also in 2009).

[22] Historical Archive of the Grifols Museum in Barcelona. Transcript of the interview by Museum manager Rosa Avellà with Hikosuke Yorihiro (Ike) in 2009.

[23] Historical Archive of the Grifols Museum in Barcelona. Historical series of the internal bulletin *Cosmos* (several years), with information about new subsidiaries. For figures on employees for 1960–2012 see Grifols 2015: 151. The corporate website has annual reports with updated figures on subsidiaries, employment, and financial data.

[24] A selection of key documents about this for the years 1980-1990, in the Grifols Historical Archive in Barcelona (GHAB) are: ID Knosys 6821, 3917, 3780, 3962,3968,3564,3767,3786,3784,3766,3769, 3774,2697,3966,3765,2705, 2680). The Center for Disease Control of the United States reported 700 cases of AIDS in the US at the end of 1982 (GHAB ID Knosys 3783). The Food and Drug Administration elaborated recommendations for blood banks and plasmapheresis centers to prevent the expansion of the AIDS cases until methods to detect the virus could be recommended, in June 1983 (GHAB ID Knosys 3973). The Food and Drug Administration Bulletin published an AIDS Update in August 1983 about Heating Methods that had been tried to de-activate the virus (HAGB ID KNosys 1625). During 1983 several Western European countries reported victims of AIDS in Spain, Germany, the United Kingdom, France, and Italy. Grifols was the first company in Spain to follow the US FDA recommendation of heating plasma derivatives stocks to de-activate possible AIDS virus, regardless the economic losses, something other companies in Spain which collapsed later in the 1990s did not follow as early as Grifols (Grifols 2015). According to Zachary Taylor and Feldman and Bayer the Japanese government, through the Ministry of Health and Welfare, could have known in 1983 about possible early links of AIDS and hemophiliacs receiving blood transfusion, and they could have known, also, about the Food and Drug Administration recommendation to heat plasma products as a possible method to deactivate viruses in plasma products stocks. The price of heated

plasma products could be in average up to 60 per cent more expensive than unheated products. National policy debate on this only would have sparked in 1985 in Japan with the end of the distribution of unheated plasma products and in 1986 with mandatory blood testing (Zachary Taylor 2016 and Feldman 1999). The partnership with Grifols started before these events in 1982, and the Grifols always followed FDA rules, and also their partners in the US Alpha Therapeutic which despite being owned by the Japanese GCC was a US firm and had to follow strict US FDA requirements.

[25] Historical Archive of the Grifols Museum in Barcelona. Transcript of interview by Rosa Avellà with Hikosuke Yorihiro (Ike) in 2009. The same assessment of the positive perception felt by Japanese managers in relation to having stability among the management of a firm with which to establish a long-term partnership was expressed in another case of a successful alliance between Japanese and Spanish companies in the stainless steel industry: Acerinox (Fernández Pérez 2015).

[26] Historical Archive of the Grifols Museum in Barcelona. Academia Grifols and Grifols Academy of Plasmapheresis annual reports 2009–2015. Hard copies were kindly provided by Eduardo Herrero for the years 2009 and 2012. Other years are available in the Academy and on the Grifols websites. The reports provide details on the number of students, the number of professors and staff, the name of the courses (which include the history of Grifols, quality control courses, courses about what happens when quality is lost in a plasma company, and general technical courses that familiarise students with key medical and chemical concepts that are relevant to the corporation's technical staff working with plasma). The academies have established partnerships and cooperation agreements with local educational and medical institutions to disseminate their values and activities in their local communities.

[27] Interview with Eduardo Herrero, 9 December 2013; Grifols 2015: 150–153.