Maquiladora Industrialization of the Baja California Peninsula: The Coexistence of Thick and Thin Globalization with Economic Regionalism*

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Introduction

Export processing zones (EPZs) are widely recognized as strategic sites for globalization (Sassen, 1998: 392). This article assesses the shape of industrial growth at the western end of the US-Mexico border in order to clarify the meaning of the sometimes vague terms globalization and zone. Maquiladora factories in northern Mexico began with the creation of an EPZ at the northern border in 1966, but are no longer limited to that area, being permitted throughout the country. Maquiladora dispersion is not contained in one zone, and may be better understood as forming industrial corridors or hubs via rural industrialization (Wong, 1993; Kopinak, 1996; Alegria et al., 1997).

Tijuana and San Diego comprise the largest of fourteen dual cities straddling the 2,000 mile long border. San Diego alone is the largest metropolitan area among them, with the county having 2.8 million people in 2000. The US state of California is now the fifth largest economy in the world, having recently surpassed France in GDP. The Mexican state of Baja California Norte’s (BCN) population was approximately 2.5 million in 2000, half of whom live in Tijuana. Tijuana has more maquiladora plants than any other Mexican city, with 681 plants and 152,688 workers in 1998, and 40% of the country’s maquilas in 2000.¹ There were also approximately 400 domestically owned non-maquiladora industries in Tijuana in 1998. BCN plants are expected to grow or decline in response to the Californian economy, since the majority of their exports are destined for southern California (South, 1990: 556). The economic dependence of BCN on California produces a direct and positive variation of the GDP of the former with the latter (Mungaray, 2001: 19).

Chavez (1992: 46) argued that the linkages between San Diego and Tijuana formed by maquiladoras and their parent companies were ‘extenders’ because the relationship of subcontracting between the Mexican maquila and its foreign owner stretches the border region to the north and south beyond the legally defined boundary. Maquiladoras have also spread inland, east of Tijuana/San Diego along the international border in Tecate/Tecate, Mexicali/Calexico/El Centro, and San Luis Rio Colorado/Yuma (see Figure 1).

¹ SEDECO (Secretaría de Desarrollo Económico).

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This brings into question the degree to which the border can be stretched until it is less of a boundary for industrial purposes; that is, the degree to which globalization has diminished and/or restructured the international division here. The goal of this article is to explore the shape of the extension. Although BCN maquiladoras are located south of technology districts in northern California’s Silicon Valley which export the highest value added products from the United States, they were quite disconnected in the past, with few of the high-tech electronic firms subcontracting to maquilas (Clement and Jenner, 1987; Storper, 1997). A new connection might be expected, however, with US and Asian owned firms moving their subcontracting from outside the continent to Mexico in order to avoid taxes under the fully implemented NAFTA. ‘In the competition to become the important western US Pacific Rim center, Los Angeles may lose out not only to San Francisco or to Seattle, but even to Baja California’ (Curry and Kenney, 1999a: 19).

We measure how far regionalization and globalization have gone in this area in light of several theoretical ideas recently put forward about global flows and their limits. The implications this case has for major globalization models is considered, using the three schools of thought elaborated by Held et al. (1999: 3–27). As syntheses of several theories, these three frameworks permit us to address a broad range of questions about globalization. A disadvantage is that they are not completely mutually exclusive, sometimes predicting similar outcomes, so that supporting only one of them is difficult.

Hyperglobalists conceive of globalization as a totally new and primarily economic reorganization of human action, driven by capitalism and technology, replacing the nation state and its hierarchies with global governance and civil society. Hyperglobalists from both the neoliberal and Marxist traditions conceive of globalization as bringing about denationalization and a borderless economy. Skeptics, who tend to think of globalization as one integrated global market, argue that the concept mystifies the more important division of the world economy into three major trading blocks, and masks the opposition between regional and international forces. They view the turn of the twentieth century as the period of greatest world economic integration and current globalization as highly exaggerated. Instead, multinationals are understood as tied to particular states and regions, whose governments strongly regulate and promote cross-
border economic activity, reinforcing and deepening previous patterns of North-South inequality in the process. In contrast to the hyperglobalist prediction of the emergence of one global civilization, skeptics foresee a clash between trading blocks.

Transformationalists see present globalization trends as a historically unprecedented reordering of interregional relations, driven by the combined forces of modernity, that will remake state power and world politics in a way that is contingent on historical processes, with the final shape of things to come uncertain. Within the world’s major cities, ongoing restructuring has brought the wealth of the first world into direct contact with marginalization previously confined to the periphery. Transformationalists contend that the distinction between international and domestic affairs has been blurred, and that ‘national economic space no longer coincides with national territorial borders’ (Held et al., 1999: 8). The nation state is not the sole governor of countries, but adjusts to share power with multinational corporations, transnational social movements, international regulatory agencies, etc.

To investigate which model might be best supported by this case, we address the major points of contention between them: conceptualization, causation, periodization, impacts and trajectories. The diffusion of maquiladora industries is then mapped with the aid of concepts formulated to operationalize the shape of contemporary globalization, especially the ideas of extensity and intensity of international networks. High extensity exists in interregional/intercontinental networks and flows and low extensity in localized transactions. Intensity refers to the flows within networks formed by extensity. We also consider the velocity of global flows, which is the speed at which exchanges occur. Finally, the discussion considers the implications of the findings for defining the types of globalization in this area. All models of globalization require high extensity, and thick globalization is thought to also be high in intensity, velocity and impact. Thin globalization has high extensity, but low intensity, velocity and impact.

Data and methodology

Data were initially collected from the Secretaría de Comercio y Fomento Industrial (SECOFI) and other Mexican government departments. Variables include measures of the number of plants owned by each firm, their addresses in Mexico, industrial sector of the maquiladora, number of workers per plant, location of head office and/or ultimate parent, and capital’s country of origin. Addresses of maquiladora plants and their owners were the main operationalization of the shape of industrial growth, extensity and velocity. Industrial sector and number of workers were variables used in this article to assess the type of industrial growth and the degree of homogeneity. Mexican ownership of maquiladoras is underestimated in this study because we followed the practice observed by SECOFI of listing the foreign company from which production was subcontracted as the owner, even when the maquiladora was wholly or partly owned by Mexicans.2

Information was completed and updated by comparison with the most recent industrial directories compiled by maquiladora associations and development agencies.

2 Dun and Bradstreet define the ‘ultimate parent company’ as ‘the topmost US company within the hierarchy of the entire organization’ (1997: ix). When the origin of capital or contractor company was not in the United States, the ultimate parent was coded as the country of origin of capital, and the US head office was also coded. Alva Senzek, for example, argued the following in this regard: ‘SECOFI says that over half of the existing in-bond plants are Mexican companies, and estimates that 70% of their capitalization came from US sources. Sounds reasonable enough, until you consider that Sony USA (for example) is legally a US company and is registered as such in the official figures of the Department of Commerce. In the same fashion, Sony de Mexico would be organized under Mexican law, and would count as a Mexican company’ (1997: 18). An example of how location of maquila and owner were coded for the purposes of this article is Sony whose ultimate parent was coded as located in Japan, the US head office in San Diego and the maquiladoras in Tijuana and Mexicali, BC.
Telephone surveys of Tijuana and Mexicali maquiladoras verified locations and products. When doubtful, we often visited plants to confirm their location. Although every effort was made to update the SECOFI data, maquiladoras open, close and change hands every day, making it impossible to be perfectly current. Other sources of data were in-depth interviews with government, industry and community leaders in Tijuana and Mexicali in 1997 and 1998, and plant visits in 1999.

The smallest spatial units of analysis used to assess the shape of industrial growth are cities where maquiladoras and their owners are located. The shape of the areas formed by urban industrial agglomerations was then interpreted by assessing which larger spatial units of analysis were best supported by the findings. The next largest unit in Mexico is the municipio, and in the US, the county. The municipios of Tijuana, Tecate, Rosarito and Ensenada in Baja California are referred to collectively as the Zona Costa region. We also include the maquiladoras in the municipio of San Luis Rio Colorado, Sonora in this study since it is hypothesized to be the most easterly tip of an important industrial corridor at the head of the Baja California peninsula. The US state of California is often conceptualized in longitudinal halves, with highly profitable commodities produced in and exported from northern California. Southern California has for some time been anchored by the polycentric metropolitan system of Los Angeles, a second rung global city competing with other global cities in specialized sectors such as culture and entertainment (Hall, 1998: 25, 27). The city, municipio, county, state, country and North American continent are legally defined categories used in public administration and trade agreements.

Conceptualization

Both hyperglobalizers and skeptics see globalization as ‘prefiguring a singular condition or end-state, . . . a fully integrated global market’, while transformationalists regard it as variable and contingent on historical events (Held et al., 1999: 11). We find at least three major forms of linkage to external economies, and reject the hyperglobalists’ and skeptics’ expectation of a linear progression to a uniform economy.

Firstly, small, domestically owned industries seldom supply or buy from maquiladoras, but serve the local market and attract foreigners to numerous businesses and services. Secondly, there are two agro-industrial corridors — one between the cities of Ensenada and San Quintín, and the other in the Valley of Mexicali. These two poles of agricultural production share the same locality and different segments of the same labor force with industrial producers. The San Quintín area witnessed a dramatic increase of agricultural activity in the 1950s with the introduction of Israeli technology enabling extraction of groundwater for irrigation, and intensified the production of non-traditional crops in the 1990s using Mixteco migrant labor for export to US companies (e.g. Campbells, Del Monte). Fresh tomato production in the San Quintín valley in 1996 equaled about 10% of US commercial production, with only the US states of Florida and California producing more tomatoes in that year (Aguirre et al., 2001). We do not focus on local industry or agribusiness for lack of space, and also because the vast majority of goods passing through customs posts here have been found to be related to maquiladoras, with only a third or less related to agribusiness and local industry (Kopinak, 1998). This means that the higher intensity expected in thick globalization is largely limited to maquiladoras.

Considering different sectors within maquiladora industries, we find simultaneous systematization of some and fragmentation of others. Tijuana is linked to Tecate, Mexicali and San Luis RC, Sonora, in an industrial corridor specializing in kinescopes, which are color picture tubes for TVs, monitors, computers and other display devices. 3

3 Interview with Mario Juárez, Promotion Director Of Economic Development, at the Secretariat of Economic Development in Mexicali, BC, 13 April 1998.
The BCN Secretariat of Economic Development says that: ‘More kinescopes are manufactured in the State than all of North America, and it’s the only place in Mexico’. The inclusion of San Luis RC, Sonora, in this industrial corridor shows that intra-national boundaries do not inhibit the extension of maquiladora industrialization, and is part of the reason for the growing dominance of western Sonora over the previously ascendant eastern half of that state (West, 1993).

Figure 2 shows how the pyramid of companies contributing to the manufacture of kinescopes forms a production system. This is evidence that part of the electronics sector is moving beyond simple assembly, and clustering within Mexico. The companies shown are all located very close to the border. The upper quarter of this chart lists plants producing television picture tubes concentrated in Tijuana and Mexicali. The second quarter lists TV manufacturers, which are located in Tijuana (Sony, Sanyo, Samsung, JVC, Hitachi, Matsushita), Tecate (Matsushita), Mexicali (Daewoo, Sony, Goldstar), and San Luis RC (Daewoo).

Another aspect of kinescope prominence is the fact that maquiladoras doing television related production tend to be larger, on average, than those in other sub-sectors. They made up 28% of all plants with over 1,000 workers, whereas no other sector had even a tenth of its plants in this size category. Only 3% of all maquiladoras employed over 1,000 workers.

It has also been suggested by SECOFI that there is growing product specialization within BCN maquiladoras, with Tijuana specializing in televisions, Mexicali in computers, and Ensenada in clothing and textiles. Bancomext is actively directing the computer industry to Mexicali. The data displayed in Table 1 support these city specializations, with Ensenada having a higher proportion of its plants doing clothing related production than other municipios.

The largest sector is electrical products with almost 20% of all plants. However, clothing and other related industries came a close second at 18%. This is undoubtedly an underestimate, since the 1995 devaluation stimulated the informalization of this sector, with more women working in very small shops subcontracting from maquiladoras and in their own homes, but not registered under maquila legislation. This fragmentation differs markedly from the production system created in the kinescope corridor, since it represents a lack of development in the garment industry in this location. Garment companies have been relocating to other parts of Mexico to form clusters of related firms in what is known as full package production, preferring interior locations such as La Laguna, Puebla and Yucatán (Gerrefi, 1997). This contradictory process accelerated with the US recession beginning in 2000, when garment maquilas closed or downsized, particularly Ensenada plants, and Tijuana’s Samsung made large new investments.

The transformationalist idea that there are different patterns of globalization is supported by the varying ways in which agriculture, domestically owned industries and maquiladoras are connected to external markets. Domestically owned industries are the least connected to foreign markets, but their link is not insignificant, with medical patients, tourists, retirees etc. spending considerably in Mexico. Both agribusiness and maquiladoras produce for export, but maquiladoras are more directly connected to external markets. Maquiladoras have imported and exported supplies and products almost duty free since 1966, whereas even after NAFTA’s passage in 1994, restrictions continued to apply to the US importation of tomatoes, avocados and strawberries, which compete with US gown crops.

6 Interview with Mauricio J. Bustos, Manager of an electronics maquiladora in Mexicali, BC, 13 March 1998.
7 Interview with Beatriz Alfaro of Casa de la Mujer/Factor X, 28 June 1999.
Figure 2 Television and monitor industries in Baja California N., 1998 (source: Secretariat of Economic Development, BCN and James Curry, COLEF)
The simultaneous clustering of some sectors and fragmentation of others is also characteristic of the transformationalist conception of globalization as contradictory (Held et al., 1999: 14). While industry promoters tend to emphasize the economic dynamism of the peninsula’s maquiladoras, the trajectory followed by some sectors is quite the opposite. There are even opposing trends within the same sector. Székely (1991: xi), for example, called the huge Japanese investments in BCN electronic maquiladoras in the 1980s ‘countercyclical’, meaning that they were concurrent with the downsizing of many US owned electronics maquilas affected by the recession north of the border. This continued in 2001, when Toyota announced it was building a large new truck plant in Tijuana, at the same time that many US owned auto maquilas languished.

Causation

Monocausal arguments by hyperglobalists attribute globalization to capitalist technology, while multicausal ones by transformationalists and skeptics also include market forces, ideology and political decisions (Held et al., 1999: 12). The hyperglobalization explanation of locating different segments of the capitalist process according to comparative advantage is partly true, since inexpensive Mexican labor and lack of regulation are important motivating factors for some companies. However, transformationalists and skeptics argue that there are also important geopolitical reasons, such as adjacency to the California market, and avoiding taxation for firms originating outside North America. The BCN state government, for its part, has been proactive in facilitating some kinds of industrial development, making political factors another important cause.

Nor can industrial growth here be seen only as the expansion of western power and influence, as the hyperglobalists would have it. Mexican maquiladora centers were originally labor intensive cost reduction operations, and most US owned plants still have this emphasis. The Asian owned plants also transfer the last parts of the production process to Mexico, but they are more likely to combine labor intensive work with more

### Table 1 Distribution of maquiladora plants by municipio and economic sector

<table>
<thead>
<tr>
<th>Sectors</th>
<th>Tijuana</th>
<th>Tecate</th>
<th>Mexicali</th>
<th>SLRC</th>
<th>Ensenada</th>
<th>Rosarito</th>
<th>Total</th>
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<tr>
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<td>8</td>
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<td>84</td>
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<td>1</td>
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<td>68</td>
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<td>11</td>
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<td>53</td>
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<td>35</td>
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<td>7</td>
<td>0</td>
<td>1</td>
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<td>19</td>
</tr>
<tr>
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<td>16</td>
<td>2</td>
<td>23</td>
<td>4</td>
<td>284</td>
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<tr>
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<td>100</td>
<td>206</td>
<td>24</td>
<td>62</td>
<td>16</td>
<td>1,016</td>
</tr>
</tbody>
</table>

Missing cases = 54

**Source:** Data collected by author
sophisticated technologies because they intend to penetrate the US market from Mexico (Barajas, 1989). It is the Asian owned maquiladoras that have made Tijuana the ‘TV capital of the world’ in the last dozen years. Between 1996 and 2000, 70% of all private investment in BCN was of Asian origin, and only 15% came from the US (Mungaray, 2001: 18). Sony’s Tijuana operations, employing 12,000 people, are an example of a possible third generation of maquiladoras, designing products as well as manufacturing and assembling them (Carrillo and Hualde, 1998).

The formation of the kinescope corridor has been caused more by geopolitical factors suggested by skeptics and conjunctural factors put forward by transformationalists, than by comparative advantages of the hyperglobalists. Asian firms have been bringing their supplier companies with them to escape NAFTA’s taxation. Particularly in the computer sub-sector where there is competition with US producers, maintenance of supply chains protects company secrets and is part of competitive practices. The number one rule in Mexicali, albeit an informal one, is that Asian maquiladoras buy from other Asian plants (Almaraz, 2002). This is similar to German auto firms in central Mexico which choose their suppliers on the basis of national origin instead of comparative advantage factors such as price, quality, delivery times, etc. (Carrillo and González, 1999). In the TV sub-sector, which the Asians already tend to dominate, another reason for transplanting Asian supply firms is the lack of North American ones. Mitusharu Nakata, the vice president of Tijuana’s Japanese Maquiladora Association, complained that Mexico had no industrial policy to stimulate suppliers, noting that only 4% of the 750 components required for television production in Tijuana were produced in NAFTA countries (Arce, 2000). The degree of Asian predominance among electronic suppliers is also due to conjunctural factors, such as the 1998 Asian financial crisis, which prompted some Asian companies (e.g. LG Electronics in Figure 2) to sell their largest suppliers (i.e. Gumsung) to US firms.

Velocity, or the speed of interchanges, is linked to geopolitics in explaining the form globalization takes here. Price and time are intimately connected as causes for the concentration of computer maquiladoras in the kinescope corridor right at the border (Curry and Kenney, 1999b). Clothing manufacturers are not as bothered by the trip from Ensenada to the border as much as other sectors such as electronics, which may prefer to be adjacent to a customs post and US highways. Because speed is not as important for model changes and delivery times in the garment sector, they are more likely to respond to labor conflict and urban congestion by moving to interior locations.

Multicausal arguments of the transformationalists and skeptics provide a better account of what is driving globalization here than the monocausal argument of the hyperglobalists emphasizing technology. While technology has been important in making water available for agriculture and kinescope production, serious questions have been raised about the sustainability of capitalist extension based on these innovations. The irrigation of tomatoes in San Quintin exceeds groundwater recharge minus water export. Similarly, the giant kinescope producer, Samsung, pays more for water than for any other production cost — twenty times more for poor quality water in Tijuana than better water in Korea — which makes it virtually impossible for it to compete successfully with other Samsung companies around the world.

Nevertheless, public administrators and industry boosters continue to develop industrial parks and woo foreign capital. The US market and especially the California market are strong magnets. In the maquiladora slowdown in 2001, caused by US recession, problematic new Mexican taxation and an overvaluation of the Mexican peso, John Riley, a former Maquiladora Association executive, said that the only advantage Tijuana offered to maquila industries was its closeness to the United States, and that its previous competitiveness was decreasing (Arce, 2001). After September 11th, increased security at the border made it difficult to take advantage of adjacency, since long waits made ‘just in time’ production difficult.
Periodization

Hyperglobalists and transformationalists see globalization as new and unprecedented, whereas skeptics believe that the late nineteenth century demonstrated much higher levels of economic integration. Capitalist expansion in this part of the world did begin in the late nineteenth century, but this border began opening long before that. Baja Californians cannot easily forget that they lost the US state of California at the end of the Mexican American War in 1850, since this cut their peninsula off from the Mexican mainland. Henceforth, they would have to be documented to travel to other parts of their country overland through the US, since the only train linking BCN to other parts of Mexico crossed the border. The US state of California used to be the Mexican state of Alta California, which was divided from Baja California just south of the present municipio of Rosarito. The Baja peninsula was occupied by US soldiers, and many Mexicans who favored annexation accompanied them back to the United States, or left for the California gold rush soon after.

Because BCN is so far from domestic sources of development and supplies in central Mexico, it promoted export-led development with the Colonization Law of 1883 which allowed foreigners to own, develop and settle Mexican land. Like maquiladoras today, foreign colonists were granted many privileges, including a decade’s exemption from import and domestic duties on provisions, tools, equipment etc., and from duties on exportation of fruit. One Connecticut based railroad company had special ownership and administrative status on the land from San Quintin northward to the US border. A dysfunction of this strategy was that Mexicans remained largely unemployed. In the Valley of Mexicali, for example, the US owned Colorado River Land Company controlled agriculture, and hired only Chinese, Japanese and East Indian workers (Valenzuela, 1991: 63).

Development did not really take off under these policies, and by the time the Mexican Revolution began in 1911, BCN was inhabited by less than 2,000 people, most of whom lived in the then capital of Ensenada, and relied on San Diego for their provisioning (Melo De Remes, 1964). After the revolution, Tijuana continued to follow a strategy of growth via foreign investment, becoming a tourist centre, with all the casinos, bars and racetracks owned by and servicing US nationals. Mexicans were employed only as construction workers, waiters and street sweepers. When the track outgrew its original quarters and expanded to a bigger facility, the unionized Mexican workers employed in its construction, revolutionary veterans in many cases, invaded the old stables and renovated them for family housing (Bustamente, 1990).

Between 1935 and 1937, President Cárdenas closed the casinos and outlawed gambling, nationalized some land for the unemployed, but still had to declare the area a free trade zone to stimulate the economy. This was part of his conversión of the previous foreign oriented economy to import substitution, although he recognized the need for free trade in the north due to the distance from domestic producers. BCN conversión meant getting the same kinds of revolutionary veterans who had invaded the stables, mobilized by the ruling party’s unions to reclaim Mexican territory previously dominated by foreigners. The 1980s reversal of Mexican government policies from import substitution back to export-led development was called reconversión.

Circular migration of Mexicans to the United States has blurred the international borderline, with Mexican American citizens deported illegally during the depression, but commuting daily to maintain US jobs, and moving back when possible. People living at the border, called borderlanders, tend to have familial and commercial ties on both sides of the line (Martinez, 1994). Maquiladora managers commuting daily from US homes to Mexican plants are the newest borderlanders.

A transnationalist capitalist class throughout the border has been important in promoting globalization (Sklair, 2000). It is not without local roots. Northern Mexican entrepreneurs accumulating profits from the import of US commercial products since the 1930s, later transferred them to the maquiladora sector within their own investment portfolios. They were in many cases the negotiators of border development policy...
In contrast to the failure of the externally oriented economies of the 1920s and 1930s to provide jobs for Mexicans of sufficient quantity or quality, the more systematized maquiladora electronics cluster, particularly the Asian owned sub-sector, has been ‘endogenized’ by hiring locally trained Mexican engineers in decision-making roles (Contreras et al., 1997). Technical personnel may act as social agents, mediating multinational corporate policy and its local requirements. This is in contrast to maquiladoras linked to more artisanal sectors, such as 20th Century Fox’s maquiladora, which employed only 50 Mexicans in 1998 and imported highly paid foreign personnel from Los Angeles, a three hour drive away.

We suggest that while the growth of internationally connected industries has been precipitated by technological advances (e.g. microelectronics) and comparative advantage (e.g. low wages) emphasized by the hyperglobalists, it has roots that go back before the beginning of the twentieth century, the important turning point which skeptics identify. What is new about BCN export development via maquiladoras is the magnitude of economic growth since the 1980s, the preponderance of Asian investment in the 1990s, and the large numbers of Mexicans employed, a few of whose positions are powerful and rewarding. Industrial consolidation here is mainly due to conjunctural and political factors emphasized by the transformationalists and skeptics, e.g. trade agreements and connections to large US markets. The leadership of local entrepreneurs in facilitating maquiladoras and their ‘endogenization’ via the inclusion of Mexican professionals suggests that they are not denationalized, as hyperglobalists suggest.

Distributive and decisional impacts

While the previous section showed how engineers have benefited from maquiladora growth in BCN, we might ask about the impact on others, such as direct workers, who make up 80% of the maquiladora labor force. Hualde (2002) argues that the original engineering group arose and reproduced its privileged position on the basis of a polarization within the maquiladora labor force between themselves as professionals, and all the other maquila workers who have quite precarious jobs in comparison. A small group of male engineers, educated in the same local public schools, established themselves in a few plants in the early 1980s, before Tijuana maquiladoras boomed. These individuals managed their social networks adroitly to encourage investment, selling multinational corporations an optimistic bill of goods about the stability of the Tijuana labor force, which they confidently argued they could deliver. In the process, many of the network’s founding members talked themselves out of engineering jobs, convincing multinationals to bring more engineering work to Tijuana under their direction as corporate executives, and also talked themselves into much better positions as administrators of large industrial parks.

Organizations such as the Association of Industrial Executives and the Technological Institute of Tijuana acted as nodes in their network, restricting a democratic diffusion and absorption of technical knowledge, so that most jobs remained the way they had been in the early assembly maquilas: defined as low-skilled, and receiving commensurate low pay with little chance for upward mobility. This reinforced gender inequality, since over half of all workers in BCN maquilas were female in 1997, but only a small minority of engineers were women (INEGI, 1998; Hualde, 2001). Professionals within the maquiladoras enhanced their own jobs and protected their wages against the ravages of devaluation by arranging for special compensation. Meanwhile, Tijuana’s unions, which are the most likely along the border to negotiate contracts protecting owners, ensured that workers remained poorly represented and organizationally weak, with their real wages dropping (Quintero, 1997). Although the maquiladora industry has kept unemployment down, it generates a per capita income lower in Tijuana than the region’s average (Ruiz and Aceves, 1998: 36).
Others sharing little of the benefits from maquiladora growth are small and medium sized domestic Mexican industries. The state government of BCN has actively sought ties north of the border, but has not sufficiently included smaller local entrepreneurs in industrial policy, resulting in the fact that most of the suppliers of inputs for BCN maquilas are in the Los Angeles–San Diego corridor (Mungaray, 2001). In order to attract more capital-intensive electronics manufacturing, the state government has absorbed the social costs of developing managerial expertise in this sector, to the detriment of the export potential of less capital-intensive domestic entrepreneurs.

There have been efforts to rebalance the distributional impacts of globalization by trade unions, social movements and political parties, without much success so far. Repeated reports have linked protests by farm laborers in San Quintín to the October 6th union, the only maquiladora union in the state recently independent of the union centrals subordinated to the state and industry. The October 6th union has been assisted by San Diego NGOs, but authorities regularly deported foreign activists for illegally interfering in Mexico’s domestic politics. Officials of the Tijuana Maquiladora Association believe that the leaders of the October 6th union were funded by US unions (Carrillo and Kopinak, 1999). While the left of centre PRD won a large number of votes in the San Quintín-Ensenada area in the 2000 federal election, a notable electoral outcome in the state that has the longest-standing right of center PAN administration in Mexico, their party remains in disarray.

Given the skewed distributional impacts of maquiladora growth, and the under-development of local political institutions which might cushion inequality, efforts at redistribution are often limited to crime. A fledgling BCN criminal justice system began to break down with increased drug trafficking in 1993 (Golden, 2000). The Tijuana assassination of the leading presidential candidate in 1994 signaled the inability of the state to control public order. This has undoubtedly facilitated the kidnapping of high-profile maquiladora managers and robbery of payrolls. There are conflicting ideas about who is responsible for the boom in the kidnapping industry, but the attraction has been the ‘easy pickings from the maquiladora-rich business community’, or the ‘border aristocracy’, such as maquila managers and industrial park developers (Manson, 1999: 61).

In 1998, a training session for 80 Mexican and US law enforcement agents on how to handle cross-border kidnappings took place at the San Diego Naval Training Center, but there are still many problems which impede the effectiveness of cross-border policing, such as language, communications and questions of jurisdiction. The lack of effectiveness of Mexican police is partially due to the fact that they were part of the traditional system of Mexican patron-client relationships, and have not benefited from globalization.

Maquiladora managers have insisted on being included in public security planning, and have played a leading role in advising the state on how to permanently implement better security measures which will last beyond the term of any one elected government. At the end of the decade, businessmen organized a mass public rally in conjunction with political and social groups to demand an end to crime (El Mexicano, 26 February 1999). While maquiladora workers have been robbed on their way to and from work on buses circulating through industrial parks, it is managers who are best able to pressure the government for protection, requesting legal reforms permitting them to bear arms, and hiring extra guards. Most multinationals insist that their non-Mexican personnel live on the US side of the border for security reasons, and the BCN governor has responded by increasing police protection for maquila managers commuting across the border at rush hour, angering local entrepreneurs who see it as special treatment.

This section supports parts of all three models. The emergence of new occupational groups such as engineers who are powerful and well paid is unprecedented in BCN. They are highly polarized from the majority of the maquila labor force, whose subordinated unions have responded to globalization by negotiating contracts with conditions below legal standards (Gambrill, 1989). However, the reform of constitutionally enshrined federal labor law has been slow in coming, since it is important for disciplining workers...
should they try to organize independently. This indicates that the hyperglobalist prediction that the market will do away with state power is not the case here, but supports the skeptical thesis that ‘rather than being out of control, the forces of internationalization themselves depend on the regulatory power of national governments to ensure continuing economic liberalization’. (Held et al., 1999: 5). The efforts of maquiladora managers to strengthen the state’s police forces and difficulties in cross-border police cooperation support the transformationalist ideas that globalization can foster an activist state which shares power with other bodies such as multinationals, and that territorial boundaries have not disappeared, but become more problematic.

**Spatial extension of maquiladora industries**

In Mexico’s northwest corner, we find a predominance of low extensity, or localized networks and transactions. One of the trends demonstrated in Table 2 is that Tijuana is home to approximately two-thirds of all plants and workers and 72% of all value added. Despite growth of maquiladoras in other parts of BCN, Tijuana retains its historic importance as the most significant maquiladora center. When we put this finding together with the map which shows relative sizes of municipios (as in Figure 1), it is clear that Tijuana has the greatest density of plants and employees. Neither do maquiladoras penetrate very far south, since there is only one south of Ensenada city in San Quintín. The area from San Quintín to the international border is the same region governed by the Connecticut based train company in the late nineteenth century, representing a previous form of export-led development in the same place. Three-quarters of the state’s territory has no maquiladoras at all. South of Ensenada, the next maquiladora center on the peninsula is at the cape, in La Paz, Baja California Sur, with 9 plants and 3,564 workers (Solunet, 1999).

While over 30 years of growth in BCN maquiladoras has been contained in a small area, owners are a little more widespread. We find that they have both high and low extensity, being very localized for the most part, but also having an important intercontinental reach. Over four-fifths (84%) of all maquiladoras had owners in the United States. Over two-thirds (70.5%) had head offices in the state of California. Of those owners in California, almost all (95%) are in southern California. Thus, we do not find strong links between BC peninsula maquiladoras and Silicon Valley or northern California more generally (see Figure 3). This level of extensity among owners at the western end of the border is much lower than Alegría (1992: 224) found for Ciudad Juárez maquiladoras, which had only 26% of their head offices in the adjacent state of Texas, but another 30% much farther north in Illinois.

**Table 2 Number of maquiladora plants and workers by municipio**

<table>
<thead>
<tr>
<th>Municipio</th>
<th>Plants</th>
<th>%</th>
<th>Employees</th>
<th>%</th>
<th>Value Added*</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ensenada</td>
<td>70</td>
<td>6.5</td>
<td>10,783</td>
<td>4.6</td>
<td>74,105</td>
<td>3.5</td>
</tr>
<tr>
<td>Mexicali</td>
<td>180</td>
<td>16.8</td>
<td>47,282</td>
<td>20.5</td>
<td>452,846</td>
<td>21.3</td>
</tr>
<tr>
<td>Tecate</td>
<td>114</td>
<td>10.6</td>
<td>10,314</td>
<td>4.5</td>
<td>70,012</td>
<td>3.3</td>
</tr>
<tr>
<td>Tijuana</td>
<td>681</td>
<td>63.6</td>
<td>152,688</td>
<td>66.3</td>
<td>1,526,635</td>
<td>71.9</td>
</tr>
<tr>
<td>San Luis R.C.</td>
<td>25</td>
<td>2.3</td>
<td>9,367</td>
<td>4.1</td>
<td>n.d.</td>
<td>n.d.</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,070</strong></td>
<td><strong>100.0</strong></td>
<td><strong>230,434</strong></td>
<td><strong>100.0</strong></td>
<td><strong>2,123,598</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

* Thousands of pesos

**Sources:** Secretaría de Desarrollo Económico de Baja California (1998) *Estadísticas Básicas de Baja California* (No. 84, October: 35); Solunet (1999)
The largest concentrations of owners outside the United States are in Japan (63), Korea (37), Taiwan (11), China (5), Singapore (3) and other Asian countries. There is also a sprinkling of owners in European countries (4), but these findings indicate that high extensity links maquiladoras at the head of the Baja California peninsula to the Pacific Rim trade block. The dispersion of owners within Asia is also quite extensive, stretching from the southeast in Taiwan and Indonesia and to the northeast with Korea and Japan. The sector in which these non-NAFTA owners participate is most often electrical. Almost half (44%) of the maquilas with owners outside the US made electrical products, with 18% producing TVs and 12% computers. This is more than double the frequency of electrical products observed in all maquiladoras in this area (20% as calculated from Table 1), and indicates the predominant role played by Asians in the development of this sector.

Most non-North American owners also having US offices locate them in southern California. Whether the most important decisions are made in the US headquarters or in the Asian home office depends on the strategy of the individual firm. Some electronics

Figure 3 US locations of owners of maquiladoras in the Zona Costa, Mexcali and San Luis RC
firms do make important administrative decisions in their US headquarters in the San Diego area, but others still carry out their most important functions in Japan or Korea. Other California offices are only warehouses.

The city in southern California with the greatest number of head offices is San Diego, with 116. Los Angeles has the second highest with 81. If we include head offices outside the city limits, but considered to be part of the same area, we find that the San Diego area has 248 head offices and the Los Angeles area 179. Tijuana and Rosarito maquiladoras are somewhat more likely to have head offices in San Diego than Los Angeles, indicating the existence of a very concentrated export platform located at the ocean right at the border. Tecate, Mexicali and San Luis RC maquiladoras were more likely to have head offices in the Los Angeles than the San Diego area, and they were also more likely to have head offices in their twin cities just across the border: Tecate, Calexico and San Luis/Yuma.

In central Los Angeles, we find BCN maquiladoras connected to low-tech craft-specialty ensembles (Scott, 1989: 1577). Table 3, which also includes US headquarters of firms with their parent companies outside the United States, shows that Los Angeles is much more likely than San Diego to anchor maquiladoras that make furniture and clothing related products. San Diego has more head offices for maquilas likely to have more technologically advanced production in the computer, TV and other electrical sub-sectors. Companies coming from outside the United States are largely responsible for the greater weight of the TV sub-sector in San Diego. Four-fifths (80%) of all the head offices of TV companies in San Diego are in fact the US headquarters of firms originating outside the US.

Findings of previous research also indicate that intensity, or activity within a globalization network, is driven to a high degree by maquiladoras and their owners located in the immediate area of the border. A study of goods passing through the customs crossing with the highest industrial use in BCN found that 90% of goods going south originated in southern California cities and 83% were destined for Tijuana. Over two-thirds (67%) of Mexico’s exports destined for San Diego were maquila products, whereas

<table>
<thead>
<tr>
<th>Sector</th>
<th>LA Proper Area* (N=81)</th>
<th>LA Area* (N=179)</th>
<th>SD Proper Area* (N=116)</th>
<th>SD Area* (N=248)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furniture</td>
<td>16.6</td>
<td>12.2</td>
<td>3.7</td>
<td>6.7</td>
</tr>
<tr>
<td>Auto</td>
<td>1.3</td>
<td>4.4</td>
<td>5.6</td>
<td>5.2</td>
</tr>
<tr>
<td>Computers</td>
<td>2.6</td>
<td>2.8</td>
<td>8.4</td>
<td>6.4</td>
</tr>
<tr>
<td>Air</td>
<td>2.6</td>
<td>1.1</td>
<td>0.9</td>
<td>0.7</td>
</tr>
<tr>
<td>TV</td>
<td>0</td>
<td>0.6</td>
<td>2.8</td>
<td>5.6</td>
</tr>
<tr>
<td>Other Electric</td>
<td>1.3</td>
<td>6.6</td>
<td>17.8</td>
<td>16.1</td>
</tr>
<tr>
<td>Food &amp; Fish</td>
<td>0</td>
<td>1.1</td>
<td>2.8</td>
<td>1.1</td>
</tr>
<tr>
<td>Clothing</td>
<td>37.2</td>
<td>32.6</td>
<td>15.0</td>
<td>12.7</td>
</tr>
<tr>
<td>Metals</td>
<td>7.7</td>
<td>7.7</td>
<td>5.6</td>
<td>6.4</td>
</tr>
<tr>
<td>Plastics</td>
<td>1.3</td>
<td>1.1</td>
<td>5.6</td>
<td>5.6</td>
</tr>
<tr>
<td>Medical</td>
<td>0</td>
<td>1.1</td>
<td>1.9</td>
<td>2.6</td>
</tr>
<tr>
<td>Packing</td>
<td>3.8</td>
<td>2.8</td>
<td>0</td>
<td>0.7</td>
</tr>
<tr>
<td>Other</td>
<td>25.6</td>
<td>25.9</td>
<td>30.0</td>
<td>30.2</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

* Note that the Los Angeles and San Diego areas include the respective cities

Source: Data collected by author
less than half (44%) of those going to Los Angeles were (Kopinak, 1998). The limitation of high intensity to the border prompts claims that the California/BCN relationship can be characterized by saying that the US state of California ‘is, to a great extent, trading with itself’, since its exports do not go much farther than the maquiladoras, where they are processed and immediately returned to California (Collier, 1999).

The predominance of a low level of extensity, combined with small but significant high extensity, has led to differing points of view between regionalists and globalists, as the skeptics predict. Maquiladoras have contributed to the economic consolidation of the region at the western tip of the border, although there is some disagreement over the appropriate share of benefits to different cities, counties and countries involved. Los Angeles’ links with BCN maquiladoras strengthen its competition with other sub-global cities in specialized spheres such as entertainment. On the other hand, the fact that maquiladoras with higher technology tend to be more connected to San Diego than Los Angeles strengthens the position of San Diego within southern California and also vis-à-vis northern California. The greater presence of the US headquarters of firms with head offices outside the US in San Diego has a similar effect. However, this does not satisfy San Diegans who feel their city and county are losing out to Los Angeles due to lack of bi-national cooperation in infrastructure, leaving it with inadequate air, rail and cargo facilities (Erie, 1999).

There are also those in Mexico who argue that too little value added is realized in their country because many foreign owned companies use their own service providers instead of Mexican ones. Mendoza et al. (1993: 61) say that ‘value added, other than wages, is massively appropriated by other regions, since it is not even reported in Tijuana’. Even this small amount may be coveted within Mexico, however, since the 1995 separation of Rosarito as a municipio independent of Tijuana was spearheaded by business leaders who immediately set up an industrial park and convinced multinational firms to locate there by advertising plentiful labor and giving free services. This was after a dozen years of struggle with Tijuana for control of their own land, its development, and the power to collect taxes.

The Mexican state has facilitated joint ventures between Mexican government agencies and Japanese firms, to which some US firms have objected for purportedly giving Japanese multinationals unfair advantages in Mexico (Székely, 1991: xii). This accusation may also mask US suppliers’ difficulty in producing at the high quality level required by Asian firms. US based multinationals are also quite aware that Asian firms in some sectors have located in Mexico to better compete with them for the North American market, and they have the same ambivalent feelings about them which they direct to Asian transplants north of the border. Part of NAFTA’s purpose was to increase US capital’s ability to compete with Asian capital, which we have shown in this section to be the greatest contributor to globalization here.

The hyperglobalist thesis that restructuring is a top down movement by capitalism to erase borders is contradicted by these local conflicts over who will share in the benefits from industrial growth. Urban and state government leaders are active contenders in a competition for maquiladora investment. These conflicts are sometimes between regionalism and globalism, and also between the North American and Asian trading blocks, as the skeptics predict. In the 2001 recession, when US owned firms cancelled many of their maquiladora orders, Mexican government authorities tried to stimulate more orders from European companies to make up the loss by strengthening ties with the world’s third great trading block.

**Discussion**

The industrial boom at the western end of the US-Mexico border has brought about more massive change than ever seen in this location previously, not only in the area’s economy, but also its social and physical structure. One can see maquiladora plants virtually everywhere in Tijuana. The spread of plants into Tecate was facilitated by the
bulldozing of vast hills into more accessible tableland. Combining high extensity, intensity, velocity and distributional impacts discussed above, the kinescope corridor right at the border gives the appearance of thick globalization.

Great as the changes may be, they are not historically unprecedented, as the transformationalists and neoliberals would suggest, since there is a long history of the border becoming blurred by peace treaties, foreign investment, circular migration, commuting workers and trade agreements. The earlier appearance of export-led development in the late nineteenth century, its conversión to import substitution between 1930 and 1960, and its reconversión back to an emphasis on foreign investment starting in the 1970s supports the skeptical approach.

Findings of low extensity and intensity, or limitation of industrial location and trade to a small area at the western end of the border at the Pacific Ocean, as well as decisional impacts, such as the inability of the state to implement criminal justice effectively, indicate that thin rather than thick globalization may be more common in the larger context of the peninsula as a whole. Nevertheless, establishing new ‘sites of power’ (Held et al., 1999: 23) has helped pull influence southward within the US state of California, eastward from Asia, westward across the north of Mexico, and northward, from the central capital.

There are several reasons to suggest that thick globalization will be limited to the area immediately at the border. The term reconversión has been used most recently to refer to foreign investors actually leaving Mexico in response to the weakening US economy, and if this becomes a major trend, thin globalization may increase. Consolidation of the electronics sector has occurred in the last two decades, and its development may have peaked. A former leader of the Western Maquiladora Trade Association has suggested that the full implementation of NAFTA at the end of 2001 will increase costs for many maquiladoras and that investment will ‘soften up’.8

This research also provides empirical support for the existence at the western tip of the US-Mexico border of a global transborder city-region (Pezzoli et al., 2001). While the methodology section above considered the city, region, transborder and global measures as separate units of analysis, the findings indicate that the metropolitan areas of San Diego and Tijuana are definable economic regions, and that they are joined not only by capital from within their region, but perhaps most importantly, by intercontinental firms, who add a global reach.

However, the shape of any particular global transborder city-region depends on the issues being addressed. This article has outlined the shape such a city-region takes at the level of industrial investment. Given the segmentation of the labor force, such a global transborder city-region does not exist for many maquiladora employees, except for the small group of managers who commute daily from the US to Mexico. Indeed, one of the serendipitous findings of our telephone surveys of maquiladoras to confirm location, was that many Mexican employees we spoke to did not know the location of the head office of their plant. This lack of information is indicative of low chances for upward mobility or community control of the powerful corporations providing the largest number of jobs in their city.

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