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Asian spies, American motors, and speculations on the space – time of value

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Abstract. How do strategists' decisions regarding the organization of corporate resources reflect the interplay of power and identity within the firm? And what is at stake for the production of value? These are the questions I address through the presentation of an ethnographic study I conducted in the Asian and Mexican facilities of a multinational firm that produces outboard motors and boats. I draw attention to a particular moment in this corporation's history when a group of US – American engineers try to prohibit corporate support for a new product designed by the company's Hong Kong Chinese engineers. When the Asian engineers defy their American colleagues' directives, they are referred to as 'Asian spies' and are threatened with dismissal. In this case, I demonstrate how these nationalist turf-battles inside a corporation are struggles over the form of value itself. They are battles over how the materials of value are recognized as such across a corporation's employees and within the commodities it manufactures.

Introduction

Investigating corporate strategies involves investigating corporate strategists, and the study of both, as numerous economic geographers have shown, is central to understanding the process we call 'globalization'. As Clark and Wrigley put it, "Strategy matters and managers have discretionary power over a range of relevant resource allocation" (Clark and Wrigley, 1997, page 289). For this reason, Schoenberger urges us to "theorize the corporate strategist" (1994, page 436), by which she means "to understand something about them as social agents in a particular time and place" so that we might comprehend how they could "produce inappropriate corporate strategies". In other words, the assumption that corporations and their strategists blithely follow rational economic laws for maximizing their profit margins is no longer tenable.

In fact, if competitiveness is the measure, as Schoenberger (1997) has shown with Xerox and with Lockheed, some powerful people in corporation positions make decisions that appear to be downright economically stupid. However, as she illustrates with both firms, if the decisions over what sorts of changes to embrace, and/or repel, are viewed in light of efforts to protect and guide a corporate culture, then perhaps some sense can be made of the geographic trajectory of multinational firms around the globe. Sometimes the questions to be asked are: How do strategists' decisions regarding the organization of corporate resources reflect the interplay of power and identity within the firm? And what is at stake in this interplay for the production of value?

These are the questions I address through the presentation of an ethnographic study I conducted in the Asian and Mexican facilities of a multinational firm I call, On the Water (OTW), with its Asian and Mexican facilities denoted as Asia on the Water (AOTW) and Mexico on the Water (MOTW), respectively.[1]. OTW manufactures outboard motors, boats, and other recreational water equipment, and between 1999 and 2000, after a decade of dismal market performance, the company was sold to

[1] All references to the company and to informants are pseudonyms.

a private investor, who removed it from public trading and dismantled much of its multinational structure. I draw attention to a particular moment in this corporation's history, prior to its dismantling, when a group of US–American executive officers, engineers, and managers attempted to prohibit corporate support of a new product designed by Hong Kong Chinese engineers who worked in the company's Hong Kong branch. The Asian engineers sought support for a new product to compete in the Southeast Asian market where Japanese corporations enjoyed a virtual monopoly. OTW's signature products—large-horsepower motors used for deep-sea fishing, water skiing, and racing—were not suited for the rivers, canals, and mangroves that are navigated by the fishing-dependent communities in Malaysia, Thailand, Indonesia, and southern China. The proposed motor required relatively little capitalization up-front for its development and manufacture because it was built of primarily electrical components that would be provided by external suppliers. The US–American team rejected it outright and chastised the Asian team for daring to propose it.

This initial refusal occurred in 1989, but it did not deter the Asian team. Operating with stealth, they organized a market study of some Malaysian fishing villages and then out of this research developed a new motor prototype. When they finally publicized their results, their US colleagues accused them of being 'Asian spies' who threatened the integrity of the company's 'American motors'. Even though the 'Asian motor' eventually became the company's top market performer, the company did not, in the end, survive intact. Why the Asian team had to struggle against such accusations as they tried to innovate product lines, enter new markets, and enhance the corporation's global competitiveness is a critical question for understanding OTW's strategy and the strategists who shape it.

This case illustrates that corporations are not monolithic entities that operate as unified subjects. Just as in any social entity, the complexities for negotiating who is whom and what is at stake in determining their differences create myriad assortments of coalitions and divisions that affect the corporation's daily operation, throughout its phalanx of offices and production complexes. Likewise, the corporate strategist is not a unilateral decisionmaker. Instead, we shall see in this case how a corporation lurches to and fro as various groups vie to determine who will wield the most power over the company's eventual resource-allocation strategy. This is a turf battle. Those who win receive corporate resources for operations, jobs, and product development. Those who lose, lose in those same areas. And this spatial battle plays out through politics for defining who are the firm's skilled and legitimate strategists.

Nationality is a key concept at work in the events I explore at OTW. In this case, we see how nationality differentiates subjects according to value, as in some people are worth more to the corporation than others and therefore deserve more corporate investment in their ideas and operations. Yet nationality when interwoven with a discourse of skill also creates a means for seeing a common ground across these differences through a logic that says such differences in value are not arbitrary; they are based upon skill. Those who receive more corporate resources do so because they can handle them and, therefore, they deserve them. Those who are not on the receiving end are in that position because they lack skill. These different groups are bound and distinguished by explanations of skill. By laying claim to their own skills and to the lack of skills embodied by their counterparts, the Chinese and US–American engineering teams compete against each other for internal corporate resources and status.

Theories and methods

To make the articulations between discourses of nationality and the production of value, I depend upon Marx's critique of the capitalist labor theory of value and offer some feminist speculations regarding the dynamic between social difference and the production of value. In what might seem to be a departure from my other work, I have chosen to focus on nationality rather than on gender in this essay. I do this as a matter of choice and not because I believe gender, among other salient categories such as age or race, not to be relevant. In fact, it would be silly to assert that any of these categories are discretely determined, and discourses of nationality are clearly inflected with notions of race, ethnicity, and gender. However, I am focusing on nationality for two principal reasons. First of all, nationality was overtly and repeatedly raised throughout my research, and, second, my decision to interrogate its usage as an explanatory device means that I run out of room within this paper to consider the linkages with other social categories so obviously relevant to the context I study. However, this investigation into the interplay between nationality and skill and its impact on a corporation's spatial strategy proceeds directly from feminist scholarship on the dynamics linking negotiations over social identity to negotiations over power, pay, and prestige in the workplace (see Hanson and Pratt, 1988; Lawson, 1995).

Feminist scholarship on discourses of skill and their meaning for negotiating the spatial division of labor have paved the path for denaturalizing the social categories through which class differences are constituted as meaningful concepts across space (see McDowell, 1997; Massey 1984; Pearson and Jackson, 1998). Without these social categories, such as sex difference and nationality, the notions of boss and laborer would remain as abstract concepts without locally relevant social differences through which to materialize. Exploring the impact of apparently noneconomic social differences upon the obviously economic ones found within a corporate hierarchy is one of the aims here. In her pivotal essay, "Scattered speculations on the questions of value", Gayatri Spivak breaks open the stalemate between cultural studies into social difference and Marxist interrogations of the capitalist value chain with her opening sentence, "One of the determinations of the question of value is the predication of the subject" (1987, page 154). This insistence upon the exploration of subject identification as a matter of value assumes an investigation into the question of social difference. Put most plainly, the task is to ask: "What difference does social difference make to capital?" Marxist feminist scholars across disciplines have taken up this challenge to explore how the noneconomic categories of social difference extend and/or disrupt the smooth operation of the capitalist value chain (see, for instance, Gibson-Graham, 1996). In the case I present here, it is the national difference for distinguishing between Chinese and American engineers that is so critical for the production of value in OTW.

Key to this essay is Marx's analysis of the *socially necessary labor time* that constitutes abstract value under capital. This notion of time is of an average amount of labor that is necessary to produce a commodity, something that is deemed useful and thereby worthy of exchange. Labor power is one such commodity. According to Marx, in order to reproduce labor power—the energy that workers sell in exchange for wages and for the promise of providing labor to their employer—a certain amount of socially necessary labor time, required for the reproduction of the laborer, is calculated. This calculation of time represents also a calculation of value. The minimum wage or living wage illustrates this concept, and disputes over them reveal disagreements over the value required to reproduce people as fit workers.

Obviously I cannot go into a full treatment of Marx's critique of value as a magnitude of labor time, nor should I need to, as it has been well examined by other sources (see Elson, 1979; Harvey, 1982). Rather, my purpose here is to speculate upon

a spatial dimension to the concept of 'socially necessary' as a mechanism for reproducing the division of labor so crucial to capitalist value production. I do this by presenting the ethnographic material with a feminist eye toward understanding how the difference between 'American' and 'Chinese' at OTW intersects with the processes for establishing the spatial division of labor as a matter of national terrain and national subjects. Figuring out national difference and its significance for the reproduction of variously skilled employees is also a process for recognizing people as embodying different degrees of value. In this way, discourses of nationality are 'socially necessary' mechanisms for producing value across space via the reproduction of a differentially skilled labor force. As this case shows, understanding these processes is central to understanding the strategists who devise OTW's corporate strategy.

If this essay appears to be a vehicle for illustrating the versatility of feminist and of Marxist theory, then I think it appropriate to discuss also the methodological versatility within economic geography that underscores my research and analysis. The analysis is based upon ethnographic research I conducted in OTW's Hong Kong and southern China facilities in 1993 and 1997. Additional material comes from ethnography conducted in the Mexican facilities, located in Ciudad Juarez, Chihuahua, between 1993 and 1997 and additional interviews conducted in 2000. Ethnography consists of interviews and observations collected over a protracted period of time. In Hong Kong and in southern China, I had a desk in the general manager's office, and I interviewed other managers, engineers, and supervisors in both places. In Mexico, I had my own office and interviewed a wider range of employees. The interviews consist of open-ended questions and discussion, and my informants were not chosen randomly but instead according to their positions in the corporation and, also, to their willingness to speak with me.

As other geographers have shown, these methods offer an in-depth view of the intimacy binding spoken explanations with material actions, often revealing the discrepancies between them (see Katz, 1996; Kobayashi, 1994; Sparke, 1996). And the intent behind this sort of inquiry is to create, as Schoenberger has written, "an alternate ensemble of intellectual and material resources" for expanding geographic inquiry into the world around us (1998, page 13). In the spirit of such inquiry, I present the following research into how discourses of Asian spies and American motors weave into various corporate spatial strategies for producing material value and OTW's future as a competitive corporation.

A corporate cultural crisis

AOTW includes both an administrative and warehouse facility in Hong Kong and a manufacturing operation in Dongguan, China, located just north of Shenzhen in Guangdong province in the Pearl River Delta region of southern China. The parent corporation, OTW, had its beginnings in the early 20th century as a machining shop which broadened into the manufacture of outboard motors around World War 1. By the late 1930s, the company's products had become established in the recreational fishing market, and by World War 2, the corporation expanded production to the manufacture of large-horsepower engines with enough power for deep-sea fishing. The company literature expresses pride in the company's contribution to the Allied Forces in the Pacific. The company continued to expand production in the 1950s and 1960s with the surging sales of motors for recreational water sports, such as water skiing and boat racing. The company literature describes OTW's growth during this time as part of the 'American' military and economic domination of the world by the early 1970s. As a former corporate Vice-President put it, "We hit our stride

in the 1970s. Our products were in movies, winning races. OTW was a household word in America."

Like many US companies in the 1970s, OTW began to look offshore as a way to cut production costs. In 1972 the company opened a facility in Ciudad Juarez, Mexico and a couple of years later, it opened up a manufacturing facility as AOTW in Hong Kong. Both the Mexican and the Asian operations were organized around the production of parts for motors that were designed by American engineers and finally assembled by American workers who could put the stamp "made in America" on the product sold in the market.

At the height of its productive capacity in the mid-1980s, AOTW had a labor force of more than eight hundred. Unlike OTW's other offshore facilities, AOTW's management and engineering teams had not been transferred in from the United States. All but one employee, a British human resource manager, were from Hong Kong. "We have always been a Chinese factory", said AOTW's General Manager, Howard Li, "because the Americans didn't want to work here". The Hong Kong managers and engineers oversaw the manufacturing operation but they followed instructions from the engineering and management teams based in Illinois and Georgia. "They made all decisions about our products ... suppliers and distribution. We were in charge only of manufacturing", explained Li. This division of labor between the Hong Kong and US teams came into question with the company's burgeoning loss of market share to Japanese competitors in the 1980s. The company cut back on production in all of its facilities, and the Hong Kong administrators had to lay off about one fourth of its workforce in 1989. "That was a bad time", said Li, "and we had to make some decisions".

One decision made by the Hong Kong team was to devise a strategy for making inroads into the Asian fishing market. This was a market largely untapped by OTW, and it would mean that manufacturing based in Hong Kong could be oriented toward a regional market. Li and his immediate boss, D K Woo, along with two engineers, Michael Chan and F K Kwan, wrote a proposal for presentation, by Woo, at an executive board meeting in 1989. The proposal was for the funding of a study of the Asian fishing market, specifically in Malaysia and Thailand, which would then lead to a pilot manufacturing project of a new motor designed for that market. The board turned it down without much discussion. Li described this reaction as "ignorant". He said, "They didn't even think about it. They said we don't make products for that market. They didn't think they could make any money from that market".

The Hong Kong team was not satisfied with this response, and Woo authorized Chan and Kwan to conduct a secret market study of the fishing communities in Malaysia. Woo diverted funds from other areas of the company and buried the financing in the books. Chan and Kwan identified an Iban fishing community in Malaysia as an optimal study group because this community relied upon boats for daily travel and fishing. As Chan later described their decision, "These people use boats for everything. [We thought] it would give us a good idea about the market". In order to understand the boating needs of this community, the AOTW engineers stayed in longhouses, fished, and traveled with their Iban hosts over a two-week period. After this study they wrote a report in which they described the kind of motor that OTW would have to manufacture in order to enter the market against Japanese competitors who already had targeted the small fishing communities of southeast Asia.

Chan and Kwan agreed that the new motor would have to be light and adequate for trolling shallow canals as well as deeper waters. It would need to have a handle so that the boat operator could stand and it would need to be easily serviced on-site as the fishing communities are located in remote areas. The motor would also have to be marketed in a barter economy such as the one studied by Chan and Kwan.

The residents in the community where they stayed traded fish and swallows' nests to local distributors who had a market for both, especially for the latter, among the Chinese. Swallows' nests, according to some practitioners of Chinese medicine, possess medicinal qualities and, according to my informants, are coveted throughout Southeast Asia. Consequently, Chan and Kwan concluded, to compete in this market, OTW would have to approach their marketing and distribution with a flexibility which allowed them to participate in this barter-based economy. However, despite these adjustments to OTW products and procedures, the study concluded that the Southeast Asian market for boating products was growing and was potentially very lucrative. "This is a very active fishing market", explained Chan. "And they need motors."

Once the engineers returned to Hong Kong, Chan went to work on a prototype. Again, this project had to be conducted in secrecy. Li explained, "If they [corporate officers] knew that we were designing a new motor, we would be looking for new jobs". Chan set up shop in his garage. He took the electrical motor out of his lawnmower, fashioned a handle out of plastic tubing and developed a preliminary outboard motor that resembled no other OTW product. It was a two-horsepower, electrically charged, motor designed for trolling and it weighed less than fifteen pounds. It had a simple internal design with all parts easily accessible with a few tools.

Based on this prototype and the secret study, the AOTW team worked out an elaborate proposal for presentation to the board. "It was very risky for all of us", said Li. Woo and Li took the study to the next board meeting in late 1989 in Illinois and both feared losing their jobs and their careers. Each had worked with OTW for more than ten years.

Li described their reception as "hostile". "They called us 'Asian Spies' ", he said. "Many people were angry... They said we should lose our jobs for not obeying policy". Li and Woo were denied access to the American engineers' offices. "They locked us out of the building", said Li. "They said we would steal their ideas." The Asian team returned to Hong Kong thinking that their proposal had been not just a failure but potentially the end of their careers at OTW.

A former Vice-President and General Manager of one of the US-based factories, Steve, later described the mood of the time. "I guess you could say it was a 'civil war.' It was very tense. ... Those guys [the AOTW team] wanted more business. They figured out a way to keep their jobs in Hong Kong. But a lot of people were nervous about it. Nobody trusted them."

However, the proposal had caught the attention of one of the executive officers who supported it on the basis that this motor could also be marketed in the Louisiana Bayou. According to Li, this supporter was able to convince enough members of the board to give AOTW a year to design and manufacture the engine prototype. "This is not enough time", said Li. "We worked overtime everyday to get it done. They didn't think we could do it in that time." And after a year, the AOTW team had successfully designed and manufactured the motor based upon their study. By 1993 the small, electrical motor was OTW's top-selling product. It had gained popularity not only in southeast Asia but also in Louisiana and in Europe.

On the strength of this product, the AOTW engineering team received authorization to set up their own research and design facility for designing and manufacturing future motors. In 1991 Li and Woo investigated a potential site for a new OTW assembly operation in Dongguan, China, located along the Pearl River Delta in Guangdong, southern China. OTW opened a facility in Dongguan in 1993 and immediately began the process of transferring production out of Hong Kong. The costs in southern China could not be rivalled, especially in Dongguan which was less expensive even than the more popular Shenzhen Economic Zone, with labor working

for eleven cents an hour and with the lax governmental regulation of labor conditions (Chan, 1997). With these developments AOTW had evolved from an offshore assembly operation into a research and design facility, which also functioned as a regional headquarters for its own "offshore" site in Guangdong. By 1997 the Asian team had developed two additional small-horsepower engines.

The promotion of the Hong Kong engineers and managers had a direct impact on the company's market and production strategy and upon the group of employees who could direct this strategy. Li explained, "We make all decisions about the China facility. We have three product lines. We design them and manufacture them. Design in Hong Kong and manufacture in China. Now China is important to OTW. And we have all the information, so we go to the meetings now. I go. Or Michael." Chan added, "Before, they wouldn't ask us anything about design or about manufacturing. We had to do it their way. Now, OTW listens to us. Asia is our growing market, and we know this market. This is our market."

Following the decision to expand the Hong Kong facility to include research and design facilities, some of the US-based engineers and managers raised complaints about this transition to the board. A former vice-president explained the tension, "Some people quit ... Some people didn't think we should be putting our resources into that kind of product. It was not an American motor." In other words, it was a 'Chinese' motor, by virtue of its origin in 'Chinese' ideas, and this distinction meant something to the US–American engineers in terms of value.

To figure how assertions of national difference can articulate with concerns over a commodity's value, I get into Marx's analysis of capitalist value and make a few feminist adjustments to his concept concerning what is 'socially necessary' to create this value.

Speculations on the space–time of value

Marx identifies the concept of 'socially necessary labor time' as the lifeblood of capitalist production and exchange because it allows for the key formula underlying profit. The calculation of an average amount of labor time, socially necessary for labor's reproduction, is a calculation of value. Socially necessary labor time refers to the temporal amount of labor required, on average, to reproduce the amount of labor power required to produce a given item. And once this average has been calculated for different things, then different kinds of things requiring different sorts of creative processes can be seen as having something in common: an average quantity of labor power, understood as a magnitude of time.

This calculation, however, does not include the amount of value that this reproduced labor actually produces. Consequently, if the amount of time expended on commodity production can be diminished through technological innovation, then the capitalist can reap more return when the good is exchanged on the basis of an average amount of labor power; meanwhile the worker receives the same wage for producing more value. Marx referred to this arrangement as the production of relative surplus value, and this concept underlay his assertion in the *Economic and Philosophical* manuscripts, that "The worker becomes all the poorer, the more wealth he produces" (1988, page 71).

With this theory, Marx exposes the intricate calculations of human energies as increments of time that lay a foundation for value within the circuits of capitalist production and exchange. But he does not attend to why the identification of this labor would be such an important issue for value production. How is value production affected by conflict over the meaning of social identity for the creation of the commodity of labor power? What does it matter if an Asian or an American designs

a product as long as it increases the turnover rate of capital? Furthermore, as long as value is an abstraction of time, the identity of the laborer as skilled or otherwise, should not be an issue. For Marx the difference between skilled and unskilled labor was a calculation of the number of unskilled laborers it took to make a skilled laborer. Therefore, the complexities of skill differentiations did not preoccupy him beyond the degradation of skill levels in the workplace via the simplification of tasks, an argument made famous by Braverman's deskilling thesis (1974).

Feminist scholars, however, have demonstrated that the determination of skill levels across a working population is much more complicated and significant for value production than such strict Marxist approaches allow. For one thing, the degradation of skill does not only occur through the simplification of work as a result of automation.[2] The skilling and deskilling of labor also occur through the discursive constructions of subjects who are seen to embody skill differentials within their very constitutions. In finance banking (compare McDowell, 1997), in the machine shop and in secretarial offices (Cockburn, 1985) and on the assembly line (compare Elson and Pearson, 1989), the determination of which employees embody skill has not been based upon mathematical assessments of skill increments. Rather it draws upon the complexities for determining who is whom across the social landscape of the workplace, and this determination draws upon processes for evaluating and for identifying people as more and less valuable to the corporation. At the same time, challenges to the destabilization of the dominant discourses for naming certain subjects, such as gendered, raced, aged, etc, as more valuable than others threatens the spatial division of labor which depends upon those explanations for a legitimation of the corporate chain of command (see Wright, 1998; 1999).

At OTW we see such a destabilization when the Asian engineers disobeyed their bosses and went ahead with their market study and project design; they called into question a spatial division of labor organized around the concept of their lesser skill, relative to the US–American engineers. If we chalk this episode up to something that is 'merely racism', in the sense that Butler (1998) means when we bracket some things away from the economic as 'merely cultural', then we would be ignoring how seriously the managers and engineers of OTW present this case as an issue of value. To do so, would be to ignore the economic valence of this racist interaction. Furthermore, if the skill differentials between these Chinese and US–American groups were merely a compound of time required to reproduce the respective skill levels (read value levels), then the following statement would make sense: "It takes X-many Chinese engineers to make X-many American engineers."

As I hope to demonstrate with the continuation of OTW's story, this discourse of nationally linked skill levels represents a socially necessary technology for producing the valuable commodity of labor power that varies across a working population. By looking at this discourse of skill as a socially necessary technology for reproducing the diverse subjects necessary for filling out the many rungs within the capitalist division of labor, then we can see how preoccupations over nationality are also preoccupations over value production. As Marx illustrated, the division of labor is essential for guiding the surplus value production because it is the mechanism through which authority is exercised and legitimated and therefore a key mechanism through which value is exploited from human energy and distributed to the owners of capital. Making social difference visible and locally meaningful is, consequently, a critical step for the

[2] Whether work is really 'simplified' when it is broken down into repetitive tasks is difficult to measure, and now given the evidence of repetitive stress disorders associated with such work, the assertion of this work's ease should be reassessed.

materialization of the division of labor, and at OTW, discourses of national difference help accomplish this feat. In this way, the discursive technology for naming people as more and less valuable, because of their national constitutions, is socially necessary for reproducing the capitalist value of OTW. Without this technology, then the social hierarchy would not materialize as an expression of the intrinsic value levels found within the people who fill it out across space. When the AOTW engineers went ahead with their plan to develop a new motor, against their bosses wishes, they disabled this technology, momentarily, by contesting the historical alignment of nationality and skill internal to the company's global division of labor. They scrambled the traditional schema for producing value across the company's international labor force, and, in the process, they disrupted the flow of authority through the chain of command. The US–American team could therefore make a claim that it was not acting out of bigotry but out of a concern over the production of value because the Asian team was indeed reworking the technologies for producing value across the workspaces of OTW. As the former vice-president put it, "We thought it was too risky" (to allow the Chinese engineers go through with their plan).

Made in China

One of the American managers' central concerns regarding a 'go-ahead' with the AOTW proposal had to do with a potential devaluation of company's products in the market if they were to be identified as 'Chinese' rather than as 'American'. Chan explained, "They [the engineers in Illinois] said it would risk our sales. If people thought we were a Chinese company." This fear over the transformation of an American company into a Chinese one played out intensely over the decision to fund AOTW's designs, which would, in effect, elevate the Asian team to a position of Research and Design. As Al, a former production manager of the company's Mexican operation put it, "If you put R&D in China, then you're gonna have Chinese products." Steve, a former Vice-President of the company, explained: "We can manufacture our products anywhere, but we always had R&D here [in the USA]."

Until the early 1990s OTW's configuration had been built around the logic that American companies make American products by designing them in American R&D facilities and having them manufactured offshore. The question of whether the AOTW engineers would get funding for their new design was over how the company's products would be identified, as if by birth. Where would the birthplace of their ideas be located? Steve explained this logic, "I guess you could say that R&D is the birthplace of new products. We have the idea that Americans are the most innovative.... To say something is 'Chinese' is not the same as saying it's 'American'." Chan explained this logic, "They thought that if we have R&D here, then they lose control of the company. They said 'the Asians are trying to take over.' They wanted us to manufacture their designs. But their designs did not work here."

This struggle over the location of R&D and, by association, the national identity of OTW's products proceeded through a discourse of employee skills. Who could handle the responsibility? Who deserved the status of research engineer? Which corporate division would receive a boost of funding for its infrastructural and personnel development?

These questions surfaced through discourses of how different nationalities marked varying degrees of skill that justified the alignment of people into distinct positions within the company's division of labor. This alignment, as Hymer (1972) revealed years ago, has a spatial dimension. The different skill divisions within a corporation refer not only to the kind of training experienced by employees but also to their location within the geographic dispersal of corporate functions. OTW is no exception.

Corporate headquarters in Illinois had, until the early 1990s, housed all executive offices and R&D facilities to which the regional managers in the USA and abroad answered. The final assembly facility in Georgia dictated the production and quality requirements of the offshore facilities in China and in Mexico. With the opening of the southern China facility and the manufacture of AOTW's new motor, the Hong Kong offices were instantly transformed from a location that received instructions from Illinois, to one that gave orders to China with independent authority. Li explained, "We make all the decisions for the China plant. The Americans do not understand the Chinese system." And equally as important, the Hong Kong facility gained status, and the funding to back it, as an R&D office, which, in effect, elevated the Hong Kong engineers to a status equal to that of the Americans in Illinois. Production of the new motor along with the opening of the Chinese factory inaugurated a spatial shift in OTW's division of labor and the skills that justified its internal divisions.

These changes rankled the American team throughout the 1990s even though the new motor was regarded as an almost instantaneous success in the market. Steve explained, "It meant the Chinese were on our level. That didn't seem right to people here." The American team objected to the spatial reconfiguration of the division of labor even though the opening of the China factory and the development of the new, smaller motor meant that more OTW products were entering the market at a faster rate. In other words, the acceleration of OTW's capital turnover did not offset the problems raised by the changes in the company's spatial hierarchy. Li described it this way, "The problem for them was that we made the design and then had control of it. If we had given it to them (the American team), then probably it would have been better. ... But that didn't make sense. Our market is here." Steve later corroborated this view, "When you think about R&D, well that means more resources. We had the resources here already. We didn't agree on the changes in Hong Kong. . . . Sure, it's a good motor, and it sells, but that wasn't the issue. When you start telling people [the Americans] that they're losing resources to the Chinese, in this company, well some people just won't agree. They think the Americans still have an edge over the Chinese and over the Mexicans."

The Hong Kong team recognized that to gain and keep their R&D facility, they had to change the evaluation of what it meant to be 'Chinese' versus 'American' and how that would be expressed within the company's spatial division of labor. Li characterized the 'American' views of the Hong Kong team as based in 'backward' thinking. "They have old ideas", he said, "about the Chinese. But we are fast learners." Chan explained, "Yes, they [the American engineers] said some things, and we had to reply. It was a fight. . . . They said we didn't have the education. We reminded them that many of us were educated in Canada. We all have Master degrees." Li said, "We had to change their opinions of us. That is never easy, but necessary. Things are changing everywhere."

Not only did the Hong Kong team attempt to reconfigure their meaning in terms of skill, they also worked at dismantling the old OTW schema which asserted that American engineers had more skill and knowledge than non-Americans in the firm. Li said, "They always think big motors, big power, but here we need small motors. They don't understand this. They have the American mindset, big American motors. . . . The Americans think they know so much, but here they don't know very much." Chan criticized the mindset which put the US facilities at the heart of the company's supplier and distribution networks. "It did not make sense", he said, "to bring supplies from the US for our production. We have suppliers from China and Japan. They always want everything going there [the US] and coming from there. That is expensive for transportation." And by 1992 the AOTW team had managed to reconfigure this

geographic orientation. "Woo went there [to Illinois]", said Li, "and talked to everyone. He is very smart." With this approval, by 1993 AOTW had set up a distribution network with sales and services supplied through the Hong Kong office. Li described the reconfiguration, "Before services were organized through the American offices. But we have our own plan here. It is better for our market."

By challenging the logistical orientation of the company toward an Asian supply and distribution network, the AOTW engineering team also disrupted the geographic identification of the company's chain of command. Prior to 1992, at no point in the corporate hierarchy had a US employee answered to someone in a Mexican or Chinese position. The AOTW proposal to design its own motor challenged this spatial system for designating the corporate hierarchy. With their own motor, the Chinese engineers would establish their independence both from the headquarters in Illinois and from the final assembly operation in Georgia. Li indicated this when he said, "We are our own bosses here now. Some people don't like that."

In addition to becoming their own bosses, the AOTW team became the bosses of an overseas facility. Part of their proposal included a plan to establish a factory in southern China, where the world's potentially largest and least expensive labor market could be found. With labor prices in Hong Kong rising relative to those in other Southeast Asian countries, the AOTW team justified the expansion into China on the basis of labor costs. "We had a very strong proposal", explained Li. "China is the new market. It would have been a big mistake to lose this opportunity."

The AOTW motor also transformed the way that OTW motors were manufactured. The facility operated with much less inventory and pared-down cycle times. In China, they had access to a labor market that signed two-year contracts, during which time they lived in factory dormatories and worked, on average, fifty to sixty hours a week, sometimes more. Unlike the facilities in Mexico which were plagued by high labor turnover, the Chinese facility benefited from strict corporate and state regulations regarding worker absenteeism. If a worker failed to comply with a two-year labor contract, he or she would lose access to state-run services, could possibly face fines, and would also likely encounter difficulty finding a job elsewhere (see also Chan, 1997; Lee, 1995). Moreover, because workers lived in a factory dormatory and were prohibited from leaving the premises during the work week, overtime was easy to arrange. These regulations facilitated the tightening of production scheduling and the overall surveillance of worker performance. As Li put it, "It is easier to control your workers in China."

A result of this geographic transformation of OTW, via a struggle over the meaning of Chinese versus American engineers, was that by 1995, according to Li's estimates, the AOTW motor required less than one third of the time required to manufacture OTW's larger motors. A reworking of the supplier and client networks around an Asian system slashed transportation times and meant that faulty parts could be more quickly replaced. The Chinese factory had smaller inventories than the American operations even though it had increasing output. The enhanced corporate control over labor in the Chinese factory enabled managers to demand overtime when they wanted and to micromanage cycle times without worrying about labor regulations or workers' compensation for repetitive stress injuries. In other words, these changes resulting from the geographic transformation of OTW led to a decrease in the amount of labor time necessary to produce OTW motors and put them in circulation; the socially necessary labor time had been diminished. In this way, the AOTW managers diminished the socially necessary labor time, and thereby increased relative surplus value production. By reworking the discourses that had been socially necessary for producing value across the spatial division of labor and, in

the process, elevating their own status to that of strategist within the corporation, the Hong Kong engineers put themselves in a position to figure out ways to enhance the relative surplus value production at OTW. However, according to Li, the sense of mistrust in the company had never completely subsided. "Things are better now", he said, "We are all friends. But some people still won't let me in their office." Steve explained it this way in 2000, "Those guys could have come up with the best ideas and proposals... but there were ways of doing things here. And putting R&D out there and giving them control over another plant just bothered a lot of people. It changed this company. And some people think it made it worse."

That the AOTW motor had enhanced the company's value by diminishing the socially necessary labor time required to produce its commodities did not, from the US–American viewpoint, offset the costs associated with the company's reconfigured spatial division of labor. This motor's success had been forecast in the marketing study initially conducted by Chan and Kwan in 1989. And even though they carried it through with undeniable success, they still encountered resentment within the corporation. Steve put it this way in 2000, "I don't think those guys will ever be accepted as part of the inner circle. Not as long as this is an American company. Who knows, it may get bought by the Japanese and then those guys will be everyone else's boss."

Conclusion

Exploring value production through time as intertwined with the production of differential identities through space is critical I believe to any exploration into the technologies of capitalist exploitation. The questions to be asked include: How can we think of value production as implicated within the production of social difference? Do we forego a class analysis when we refuse to subsume identity production to class production?

In this essay, I offer some speculations into the spatial and temporal nexus of value production with such questions in mind. I try to show that, if we satisfy ourselves with an explanation that the US–American managers' nationalism is an end in itself (that it is, 'merely cultural'), then we fail to recognize the intimate relationship linking the production of social identity with the production of value. And we fail to see how this bigotry works toward protecting the production of value, across space, even as it works against its circulation through time. The struggles over identifying the skilled corporate strategists (in this case the engineers who design its products and identify new markets) are struggles over the form of value itself. It is a battle over how the materials of value are recognized as such within people and within the things they make.

To speculate, as Spivak does, into the difference that social difference makes to capital is to open up the field of exploration into the many different kinds of technologies socially necessary for capitalist value production through space. Marx demonstrates how, via technological innovations that shorten the socially necessary labor time for producing valuable commodities, the more value laborers produce the cheaper they become. With some help from feminist theorists, I have expanded upon the concept of technologies to include those discursive mechanisms that also cheapen labor via a devaluation of identity. The technologies for devaluing labor refer not only to those technologies experienced as external to the working subject but to those which constitute the subject itself as a site of identifiable labor (see also Wright, 2001). Through this expansion upon the meaning of technologies, I am offering some speculations on Marx's concept of what is socially necessary to reproduce a labor force that produces more value than it receives. At OTW we see how the technologies for devaluing the identity of Chinese are simultaneously augmenting the value of

US – American employees, relative to other national types, until the AOTW team disables that technology. This is neither a permanent nor a unilateral disabling; discourses of nationality do not cease to produce lesser and more valuable identities during this struggle. Instead, this technology once dedicated to producing cheap Asian engineers is reoriented with the founding of another facility in southern China, where the difference between 'Hong Kong Chinese' and 'PRC Chinese', along with discourses regarding race and sex difference, is carefully guarded as a matter of value (see Wright, 2000).

Finally, I would like to end with an overt explanation of something that I hoped surfaced between the lines of the analysis. On another scale of investigation, my research asks: Why did OTW move its operations into southern China? While lower labor costs and the Asian fishing market form part of the answer, the ethnographic study reveals that this question requires a much more complicated explanation. To a large extent, OTW moved into southern China because the Chinese engineers defeated the US – American engineers in the company's civil war. Understanding the story of this corporation's relocation strategy requires knowing something about its strategists and how the decision to move to China changed the balance of national power within this corporation.

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