



The knowledge of industrial development -

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Abstract and key words

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Jean Ruffier

Key words: Education, industrial development, private entrepreneurs.

This article examines the link between knowledge and production. Schools are advantageous for industrial development, as there is no doubt to some extent that this proposition is confined to generalities. But in reality, the relationship between school and development does not appear to be linear. It is not sufficient to have *more* school to obtain *more* development, and some teaching even may turn out to be counterproductive. The word “knowledge” is a deceitful word because it gives the impression of the existence of objective truths, that it is enough to know them in order to succeed in mastering the world. Now, the industrial world is a competitive world. In order to succeed, it is not enough to act like the others, because in this case, one is behind them and dies; you have to do better, that is differently. I propose here to assemble the data collected on the relationship between “knowledge” and “employment” in Guandong’s private factories to sustain the consideration about the knowledge that is useful for development. As we will see, school promotes and prevents industrial development. Everything must be understood case by case, individual by individual, situation by situation, the distinctive situation in which one finds oneself.

THE KNOWLEDGE OF INDUSTRIAL DEVELOPMENT

The case of Guandong

Jean Ruffier

In reading the request for a contribution, you feel like having a dizzy spell faced with the many directions that the knowledge/work relationship takes. This article examines the link between knowledge and production. Schools are advantageous for industrial development; there is no doubt to some extent that this proposition is confined to generalities. But in reality, the relationship between school and development does not appear to be linear. It is not sufficient to have *more* school to obtain *more* development, and some teaching even may turn out to be counterproductive. I propose here to assemble the data collected on the relationship between “knowledge” and “employment” in Guandong’s private factories to sustain the consideration about the knowledge that is useful for development. As we will see, school promotes and prevents industrial development. Everything must be understood case by case, individual by individual, situation by situation, the specific situation in which one finds oneself. This article examines the link between knowledge and production. It maintains that knowledge incarnate is not cumulative, because the human machine never ceases to learn. In other words any new experience strengthens existing knowledge or destroys it. This destruction is sometimes more necessary as is known by the work on innovation than the contribution of new knowledge. The word “knowledge” is a deceitful word because it gives the impression of the existence of objective truth, that it is enough to know them in order to succeed in mastering the world. Now, the industrial world is a competitive world. In order to succeed, it is not enough to act like the others, because in this case, someone is behind them and dies; you have to do better, that is differently. If there were an objective knowledge on the “comment”, everyone would behave in the same way. Therefore it is not surprising that schools do not automatically guarantee a good job in the productive system: it can only teach what people do not know. This rule is often forgotten even in management schools.

Methodological introduction

The first postulate of this work is that industrial development can only be achieved if it is based on a dense social fabric of productive activities. Of course, in some situations, it may be asked if the social fabric precede or follow the appearance big businesses, but big businesses without a social fabric of subcontractors and activities derived from it have never taken root in an industrial development. Since this point of departure is accepted, one of the principal questions of industrial development becomes the one that was posed before, each one in different forms, Max Weber and Joseph Schumpeter, namely: how can there suddenly appear a large number of entrepreneurs who remain over time? To answer, they examined the ideology of the first capitalists, the first author stressing what seemed to him as an asset in some forms of Protestantism,

Researcher at the National Scientific Research Franco-Chinese research center in management, **Jean Moulin University Lyon 3 in France, and Sun Yatsen University, China.** Jean-ruffier@univ-lyon3.fr

the second author observing and making himself the apostle of a new entrepreneurial ethic. In the context of this matter, it is the role of the school on the appearance of new entrepreneurs that we are going to examine. Do schools necessarily promote the appearance of entrepreneurs where the latter fail?

For this article, the groundwork is constituted by our systematic observation of the delta of the Pearl River (China region of Guandong) in the context of research on the industrial development of this region. For that I benefited from the support of a team of Chinese researchers and also French and Latin American researchers, a team that finally established in 2000 a laboratory of the Sun Yatsen University in Canton, of which I took over the French management. This management of a Chinese university laboratory by an Occidental, is, I believe, unique; it constitutes a remarkable basis of support for studying the local economy.¹ Thus, I benefit from the work of French and Chinese academics that lead to my accumulating information on the Canton industrial environment. Since 1989, I have traveled through the delta visiting the factories that have multiplied there. I regularly meet Chinese private entrepreneurs either during investigations or for consulting operations. Each time I ask for information on their origin and their training. I recover this information with that which I obtain in reading the research work

Unfortunately it is not possible to find reliable statistics, the category of “private industrial owners” not appearing clearly in the Chinese statistics which mix without restraint the forms of ownership. Now it is the private industrialists that interest us and not the managers of enterprises or capitalists. These people in general created their factories by themselves and have devoted a large part of their gains to make them profitable. It is no secret for anyone that local industry is not very profitable, it is much better to invest their money in real estate, which ensures good incomes with little effort than in industry which requires from the employers an investment of all of their energy for a level of profitability that is generally rather small. Furthermore, this is not specific to Guandong, the factories of developing countries generally have very small profit margins. Private industrialists there exploit their workers but at the same time have a plan, often to become the largest firm of their sector.

I note that few specialists are interested in the question of profitability of investment in the industry of developing countries. It is much better to invest in the industry of industrialized countries, the profit margins there are much higher, and normal investors do not turn toward the industry of developing countries. If they did do it, the question of industrial development would be resolved. It may be considered, from a capitalist viewpoint, these industrialists of development make a bad calculation. Their underlying motivations must be questioned, because strong motivations are needed to embark on primitive industrialization.

Thus, this work is essentially based on the knowledge of private Chinese employers in Guandong. If there is some value in generalization, it is that this region of the planet has experienced, during twenty consecutive years, year after year, and still experiences the highest industrial growth rate in the world. Can the local methods then be reproduced elsewhere? To what extent have schools aided this development? These are the questions that I deal with means – that are doubtless insufficient to claim academic validity - but nonetheless heuristic, that I have been able to use.

1. The IRD has supported this team by installing Rigas Arvantis of UR 105 for four years.

Educational system and appropriateness of job/ training

It could be imagined that the term “knowledge” would be suitable to define the knowledge corresponding to the technical field of production. The concrete observation of industrial firms shows that even that is doubtful. Actually, the implementation of industrial techniques involves the simultaneous actions of actors who know their share of the activity, but not well that of others. We have called that “complexity”, that is that we have been able to verify on many occasions that in the majority of factories there is no one who entirely controls the technology. The actions of some combine with those of others and the results do not correspond to what is expected except through successive corrections. In other words, industrial techniques are controlled more by means of collective experimentation than by the carrying out of objective knowledge on the laws of nature. Now, any collective operation proceeds by reflexivity that is that the actors change their behavior according to the analyses that they make of the past situation. This means that no collective action is really foreseeable and, therefore, there is no objective knowledge on the industrial control of technologies (Ruffier 1996).

In the sixties, Harbison and Myers worked on the correlation of statistical data on the work force, education and economic development on the labor force, education and economic development in 75 countries. They noted, first of all, a tendency to similarity in the developments. Education tended to rise at least up to a certain point, there was then a growth of scientific and technical education in public secondary schools but also in the non-public systems or informal education. These tendencies were the result of a series of strategic choices, the countries distinguishing themselves more by their delay or advance than by their divergence in the model. Therefore, it was very difficult to link industrial takeoff to investment in education. It could even be asked if the quality of the educational system did not depend more on the level of development rather than the inverse.

S.B. Levine and Hirashi Kawada (1980) stress the interaction between the Japanese public educational system, apprenticeship and other training methods on the one hand, and the exceptional development of this country on the other hand. They note the importance given to public training in the Meiji era. The entire population already benefited from a minimum of six years of public education in 1900 and it may be considered that around 1920 that the whole population knew how to read and write (*“a close to 100 % literacy was achieved”* [italicized phrase in English]). At this stage, it may be considered that Japan is only surpassed by Prussia and the Scandinavian countries. The authors note that the country has a level of training which then greatly surpassed its level of development. They let it be understood prudently that perhaps there might be found there one of the keys for these constantly very high growth rates of the years 1950-1974. However, we note that these theses are rather minimalist as to the level of education necessary for industrial development; they do not refer to the rate of diplomas, but only of the literacy rate. This means that there is certainly a positive effect of literacy on future development.

The relationship is more complex concerning the rates of diplomas: the richer a country is, the greater its tendency is to have training structures allowing the acquiring of high educational levels. The richer it is, the more it trains researchers, academics, technicians and engineers. It even becomes a location for advanced training for the rich or the powerful countries. It becomes attractive for persons having high levels of education. Actually salaries tend to be higher there, and particularly jobs corresponding to these high levels of education are generally greater. It is probable that the fact of having substantial resources in persons who are well trained is an advantage for the economic development of a country, at least we have hardly found studies that propose the opposite idea.

The relationship is however much more difficult to establish than with the literacy rate. Actually, in one case it is the level of the whole population that is in question, and it is a same basic knowledge favoring communication that is or is not diffused. In the other it has to do with diffusion of specialized knowledge, which does not allow the resolution of problems except on condition of being applied judiciously. This advanced training does not automatically improve communication abilities in production. Each specialty has its language. Each level of training creates aspirations at a specific social level. Therefore, the effect of the increase in educational levels will be less because in rising up in the specialties, schools stop being a unifier of languages. Specialists allow reaching higher technical levels, but they are susceptible of causing conflicts about distribution of tasks and difficulties of coordination.

Finally, generalized literacy relates to the entire population. To enjoy its beneficial effects, a country or a region must await the generation that follows the generalization of the education. Concerning specialized knowledge, matters are not the same. When a firm needs a specialist, if it has the resources for it, it may have him come from the end of the world. It cannot import the whole population. That is why the relationship between a high level of training and development is so difficult to establish. The case of Guangdong already well verifies the hypothesis according to which the level of basic literacy is a condition of industrial takeoff. This level does not give assurance of receiving the legal minimum salary, but it explains that the factories may operate despite an evident lack of organizational knowledge or of management in the factories. At the other end of the organization chart, the employers appear as only exceptionally having had a complete secondary education. It can even be asked if the absence of a complete education is not a condition of the employers' industrial success. Looking at it carefully, Chinese secondary schools strongly stress obedience to authorities. They inculcate a code of equalitarian distribution of resources. These two principles, if they are applied, can only lead the employers to failure. It is even possible to go further in the analysis of schools as not promoting the taking of initiative. Primary school students undergo a veritable dragooning. School starts at 7:30 in the morning with a raising of the colors, with all of the students assembled in order before the director who, after hearing patriotic songs, starts on a long moralizing discourse. Then the students go up to their classrooms where they will, for many hours, listen to the professor with their hands behind their backs, without taking notes. They have to memorize. Criticism is not tolerated, any innovation is very much disapproved and not supported by the institution.

Taking distance and critical analysis are strongly discouraged, and in the same way showing autonomy is difficult. It is well known since Cousinet (1968) to what point this method of school operation harms the children's autonomy. Furthermore, foreign firms very often complain of a lack of autonomy and a docility that has no equivalent in developed countries. Without entering into a discussion which is not a matter for my discipline, let us note only that this type of pedagogy precisely does not promote the emergence of an entrepreneurial ethic, and tends to produce people whose spirit of initiative has been constricted, and therefore little inclined or poorly trained for the profession of entrepreneur.

In Guandong although there is a rather high level of literacy, more contrasting results are found concerning higher education. Arvanitis and Jastrabsky (2004) note that the rate of school attendance in Guandong is less than the national average, particularly in respect to university training. That does not at all prevent this province from being responsible for 45% of Chinese exports of high technology products¹. In this total, electronics accounts for nearly half. Furthermore, the growth of high technology industries in absolute and relative figures is even faster in Guandong's exports. There is therefore a breakdown in the education/development relationship when of higher training is considered. How to analyze this?

The active population is undergoing great changes. The number of students has greatly increased in recent years. This growth is principally due to an increase in supply. University entry is done by a sole national competition. Students who succeeded the competition were recruited by the universities, which they became members of, according to an ancient tradition. The universities were responsible for housing and feeding them. They then placed them in a job that was supposed to correspond to their skills. The creation of provincial universities and even municipal ones allowed a little diversification of the methods of entry into higher education. Since the 2000s, the universities have started to require payment and have, in order to finance themselves, have begun to make the students pay. The national competition is continued and remains the royal road. Those who succeed benefit from an identified and valued curriculum, somewhat in the image of preparatory classes in France. Those, much more numerous, who do not succeed in the competition may enter a university anyway, at a price that is all the higher as their grades are lesser. By this game, the universities have found a certain financial affluence and may accept a greater number of students.

In a recent article Yu (2004) notes that the number of engineers and researchers is declining, that seems to be linked to the reduction in jobs offered. On the other hand the number of Chinese students is growing very rapidly, the number of Chinese students abroad going from 7,000 to 125, 000 between 1998 and 2002. The decline in employment of graduates is therefore a problem that is all the more serious. However, the growth of industrial employment appears to be great enough to absorb the surplus of graduates produced by the universities that will be paying from now on. Furthermore, entrepreneurs often complain that they lack very qualified personnel. In order to explain this paradox, we must make a detour via the thesis of Truong who works specifically on the underemployment of graduates in Vietnam, in the absence of being able to have as advanced a work on China and because Truong's explanation seems plausible for the case of Guandong.

The author questioned the graduates by long questionnaires and interviews, including by case

¹ For 2001, according to Chinese official statistics.

studies. He reviewed a number of theories on the training/job relationship and endeavored to confront them with the data at his disposal on Vietnam. For him, the situation of young graduates is made difficult because of the policy of economic opening of Vietnam, it can even become a problem to the extent where a growing dissatisfaction is created in a group that the author calls "the elite". Actually, this group seems to be marked by a culture that pushes it to be involved in the management of the common welfare, in the image of parents that seem to play an important role in the choice of careers. Now, the number of public jobs does not correspond to the demands of the group, which would develop a sentiment of loss of prestige, as well as a growing difficulty in entering the rapidly growing job market.

His researches show that male persons leaving the schools of the capital and having the best grades enter public enterprises the most easily. Actually, there is drawn between the lines a category that already corresponds to Vietnam's political elite. If someone is in the elite he/she rises more easily to the best schools and has a better chance to rise to the most coveted jobs. The factors that give the suspicion of belonging to the ruling class can be identified. But these factors are less in play for access to private enterprises, which could be interpreted as an unsuitability of the schools for non-public enterprises. (in young graduates with the best degree courses and with the highest origins, the questionnaires show that the values of solidarity appear among the first expressed). The other item, characteristic of Vietnam and Asian socialist societies is the fact that it is expected that the hierarchy occupies itself with life outside of work and not only work. Actually, in the questionnaire, the firm appears, for these graduates, as the principal place of socialization. The author notices that there is over-representation of graduates in mixed enterprises^{**}. This should not be surprising, since these firms have the most advanced technology and better salaries. However, engineers are much less numerous than others to be recruited by these firms, which leaves it understood that there is indeed a problem of adaptation of the training to jobs. On the other hand, the graduates with the highest potentials seem to refuse private employment, although it is better paid and more likely to employ them immediately at the level of their skills. Actually, these graduates constitute a privileged category that endeavors to retain its positions in a world that tries to saw off the branch on which these privileges are based. They know that their degree opens to them careers of political responsibilities. Access to these careers is done by carefully handling political relationships, while benefiting from the tranquil comfort of socialist public jobs. Their career strategies appear counterproductive to the foreign observer, because they pass on by belonging to hierarchies that are invisible but indeed real.

Vietnam is a country at the same time in transition (from socialism toward the market economy) and in development. Its educational system is evolving less rapidly than industry, which creates discrepancies that seem to penalize, those are the very ones that seem the closest to the ruling elites. But a part of this discrepancy is due to a refusal to let society fall into liberalism. The system is going to continue to need officials devoted to the common interest, who *de facto* constitute the real ruling class. On the other hand, it is a little

^{**} It has to do with Joint-Venture enterprises between the Vietnamese government and a Western company. Recruitment there is largely the responsibility of the Vietnamese administration.

disturbing that the system does not produce graduates adapted to private enterprises and, above all, to multinational companies, because the country's economic independence is probably decided more in its ability to adapt to modern industry than in the rigidities of the political-administrative field. Having said this, the difficulty of adaptation and anticipation of the educational system is also found in China, a country that is situated a step in front of Vietnam in the path to transition and in development. Universities have increased the number of their students, but it remains very controlled and pedagogical innovation is not truly encouraged there. Although specific adapted training has been developed for the benefit of managers and participating employers, the channels of initial training remain very controlled by the Party. Modern courses may be introduced in them but the essentials of the degree course develop the Communist ideology, Marxist theory and the planning of the economy. There can only be noted a discrepancy between what is taught and the movement for reform of the economy. Universities are certainly a location of intellectual agitation, of intermingling of ideas. Chinese having foreign university degree courses are recruited to the maximum. The salaries of teachers are doubled if they not only have obtained a degree abroad but have also occupied a higher academic position in a Western university. But social control is greater in universities than in the rest of society. Thus, the filters put on the Internet network on entering in China are doubled by specific filters from when the network enters into a university. The result is that the Internet is much slower in the universities and its content is more politically correct. One is found in a situation inverse to those of the clerics of the Middle Ages, who had access to works that were forbidden to the population, while in contemporary China, the clerics have a more controlled access than for anyone to literature and to information that could pose a problem for those in power.

The training of employees of private enterprises

A characteristic common to a number of private employers of Guangdong is surprising to the analyst who supposes that it was necessary to have evident assets in order to succeed: most of them have not done complete secondary studies. But, actually, it is the contrary that should surprise. To be a member of the Communist Party or to take a complete secondary cycle, in China of the seventies, that meant people received a training fulfilling respect for public planning more than adaptation to the market. In some way, the envelope that was given to secondary students, as to members of the Party, did not familiarize them with the hard laws of the market. Private employers having escaped this conditioning were able to develop aptitudes and opinions more adapted to ownership activities than those that stem from a formatting by the Party. Being an owner is to claim for himself most of the value created by these employees' work. This is not to defend a just distribution among all of the workers. If the owner is Communist, he has little chance to succeed in establishing capital. And he cannot count on the heritage, since everyone was poor in 1980. Nor can he count on the financial system since it is reserved for public enterprises, or to those held by members of the ruling class. To progress, Chinese private employers had to act outside of socialist standards. They had everything to fear from a government that defends a philosophy opposed to theirs.

That is they acted by hiding themselves to the maximum. Having had to manage all alone, Chinese private employers learned on the job how to succeed in establishing commercial relations, a field in which they excel. They all show great aptitude in taking advantage of market opportunities. Commercial aptitude is probably one of the keys for the explanation of the industrial takeoff of the Delta. Chinese private industrialists are first of all people who have created business networks by relationships of trust between actors of production. In a world dominated by bureaucrats, they can only succeed if the essentials of their activity escape their control. This is why they are adept in verbal promises more than in written commitment, in secret accounting more than analytic accounting. Actually, their success is not based on techniques learned in school but more indeed on the school of life, brawls and shrewdness.

Guandong has been in advance of the rest of China for more than thirty years (Vogel, 1989). This gives it an attractiveness for all qualified personnel who imagine that the opportunities are greater there than elsewhere. Therefore, private entrepreneurs have hardly any trouble in finding graduates if they have need of them. They find them, at least they find sufficiently qualified persons to make their rather rudimentary equipment work and disassemble and copy the competition's products. From this viewpoint, the Chinese universities' system of technical training is not as bad as that. But it will be much more difficult to find people capable of innovation, or just initiatives. Those who are capable of initiatives become owners because the salaries being very low, the cost of entry into entrepreneurship is one of the smallest in the world.

Schools at the service of the bureaucracy

In a work written in 1999, Wank analyzes the operation of the private sector. The private/public distinction that he based his research on will rapidly prove to be illusory, as the author goes more thoroughly into his investigation of the field. Wank considers that the resurgence of private enterprise does not lead to a weakening of the owner/client relationship, but to the emergence of new forms, more commercialized or monetarized, of client-oriented approach. The bureaucratic premises, "broker in power", offers its services for remuneration. This bureaucracy would assign a position of expedient to the private sector; the latter would use, against payment of a royalty, the excess productive capacities of the public sector. Wank stresses correctly as to the proliferation of administrative agencies, regulations and licenses that are the common lot of the management of the market economy and the private sector in China today. The state enterprises have access to loans in a royal manner, they have the monopoly of exports, which requires private enterprises to enter into dependent relationships with them. Sovereign predators, the foreign trade companies take the very profitable differences that exist between international prices and domestic prices, while the private firms can only profit from minor price differences within China.

It would be illusory to imagine that the government would accept a liberal society. Actually, everything is happening as if the government was developing a capitalist economy without authorizing the growth of a true industrial bourgeoisie. If it is known that the workers do not have the right

to freely choose their unions, it is forgotten that private employers simply do not have the right to belong to an association. They may not establish *lobbies* that would negotiate with the government. From reading Porter, the Chinese authorities gave the State the function of assuring establishment of competition among private enterprises. And in fact, as soon as a private owner succeeds in gaining a market, the authorities facilitate the installation of competitors just next to him who are going to copy the innovator, make his margins decline and at the same time are going to increase the volume of production while lowering the prices of the products. The State will also construct immense specialized markets which will become convenient places to find the best prices since all of the domestic producers will be strongly encouraged to come to propose their products in their competitors' milieu. This strategy explicitly aims to fight unemployment. It also aims to increase China's power in the world. Therefore it doesn't matter that jobs are badly paid if they are numerous and the State enriches itself in foreign exchange.

But if the State has the means to think of an advanced strategy, it takes away from private enterprises the possibility of investing, by forbidding them from really earning much money. Here is one of the reasons that explain that, despite the very great industrial growth of the region of the Pearl River delta, salaries have not grown greatly, with the notable exception of those of specialists who are lacking and can thus sell themselves at very high prices. In his strategic works, Michael Porter (1999) gives keys to enterprises who attempt to fight against the entry into competition. This strategy is opposed to the imitation of the others and to *benchmarking*. Actually, if the firms seek to imitate another firm, they position themselves as behind the first, which already puts them in difficulty. Furthermore, if they come to compete with the imitated firm, they can only do it by reducing the commercial margins and therefore their profit. It is by focusing themselves on what is most appropriate for their firms that productive niches can be found where it would be difficult to be imitated. It is the inverse strategy from the one the most of the Guandong private factories are pushed to. Copying is permitted to them, facilitated by proximity and the impossibility for the entrepreneurs to group together in order to make their own law. By forbidding any grouping of private entrepreneurs, the Chinese system has maintained the bourgeois class in the bureaucrats' shadow. Therefore, it cannot be surprising that universities are more adapted to government control than to management methods characteristic of liberalism. We have been able to note by ourselves that teachers of economics and management, those who seek management methods appropriate to help the growth of private enterprises, belong most often to the most subversive intellectual circles of influence of the universities.

Actually, these professors of economics and management who attempt to give tools of thinking to private entrepreneurs may create difficulties both for the Communist Chinese government and Western capitalists.

Conclusion: schools and the emergence of the entrepreneurs

Thus, schools indeed seem to be a condition of industrial development. No example has been found of a region that has seen an industrial takeoff unless literacy is generalized there for more than a generation. Guandong is no exception to this rule.

Schooling has promoted industrialization because it has put docile workers on the market, capable of understanding orders that are given.

In respect to technical training, China has had, for more than twenty years, a quite high potential of professional training centers. Engineers form among themselves national networks by specialty, which allows them to exchange information that they obtain particularly by contact abroad. Even if the technical sophistication of Chinese engineering schools does not attain that of developed countries, their volume of activity is an advantage. China today trains more engineers than the United States. The most expert workers in some technologies that are particularly in demand reach purchasing power levels equivalent to those obtained, for the same jobs, in southern Europe. If a strong flight of Chinese brains was noted following the events of Tienanmen square, it seems that today the country is seeing a its students trained abroad returning massively, and is even capable of attracting Chinese installed abroad for a long time.

From this viewpoint, there is no doubt that schools are a support for development. However the positive contribution of schools may be balanced by their negative contributions. Chinese schools are not adapted to training entrepreneurs. Though universities have recently multiplied management schools, these are mainly management MBAs, organized thanks to partnerships with Western universities, who are favored by entrepreneurs. Their cost of course is not within the reach of future entrepreneurs, these MBAs only serve those entrepreneurs who have already succeeded. The entrepreneurs come there to look for basic training elements that they lack. The send some of their executives there, with their children being more encouraged to study directly abroad. In our observation, Chinese schools seem to us to be a disadvantage to the emergence of entrepreneurs. Entrepreneurs who made Chinese industry take off are people who avoided too advance an education but found, in the flux of often contradictory industrial policy led by national, provincial and municipal authorities, spaces to develop their activities (Zhao, 2006).

It may be surprising that owners are so little trained. Actually, it seems that the knowledge necessary for the task of creator of factories is not very advanced. Far from corresponding to the acquisition of peak educational knowledge, this knowledge necessary for the emergence of a coherent enterprise ownership culture is opposed to the communist ethic transmitted by the educational system. This system of entrepreneurs emerging outside the nomenklatura and outside of schools is reminiscent of the XIX century in France. Industrialists there constituted a new class, bringing with it the appearance of a new world: the capitalist world. In a state that during forty years sought to abolish employers, their return cannot be done by the main entrance. Chinese private employers appear furtively, like a necessary evil, tolerated by the central government and pampered by local authorities. It is as if they are in mandatory supervision, they have the right to succeed, but not to take too large a place. The Chinese Communist Party well knows that the rapid economic growth of the country is based more on them than on the government enterprises. This situation is surely specific, but the observation of China allows us to ask again questions that we have too easily a tendency to forget: schools may help industrial development, but they can harm it as well, particularly in the training of minds. This idea of the school as a brake to the appearance of a new

social category of owners that would be essential to industrial development appears to me to be an idea to delve into and also to verify elsewhere than in China. In any case, the economic takeoff of Guangdong was based probably on the fact that, more than elsewhere, people gave all they had to the creation of factories. The past of privation and of oppression of spirits perhaps explains this energy that characterizes the owners, but also in part Chinese employees of today.. The second reason is paradoxically based on the progress of industrialization: the technical knowledge necessary for mass production of most of the products marketed have been simplified and has become common knowledge. Everyone can obtain them easily, and the Chinese owners have had no difficulty in procuring them for themselves. But these owners had the “luck” of not being trained in the mold of Chinese schools. Of course the ownership ethic is not learned at schools but schools can complicate or facilitate its appearance. Therefore it must be wondered, finally, if it is not the compatibility of education with the forming of an ownership ethic that would make the difference between countries that take off industrially and countries that stagnate in underdevelopment and seek how to transmit citizen values while making possible the appearance of entrepreneurs.

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