

CULTURAL PREFERENCES IN THE CHOICE OF COORDINATION

MECHANISMS

- A COMPARISON OF SWEDEN AND CHINA.

## ABSTRACT

The purpose of this paper is to analyse cultural influences on the choice of coordination mechanisms. Based on the Globe report, propositions are developed on how different cultural dimensions affect the choice of coordination mechanisms. Market mechanisms are proposed to be preferred in cultures characterized by a high level of performance orientation, assertiveness, in-group collectivism and low levels of institutional collectivism, power distance and uncertainty avoidance. Societies with the opposite profile are expected to have a bias in favour of hierarchical mechanisms. Based on the propositions, the cultural clusters identified in the Globe report are analysed and categorized according to their relative preferences for market or hierarchical mechanisms. Finally, an experimental study was performed to study cultural biases in choice of coordination mechanisms. In the experiment, two groups of students of Swedish and Chinese origin performed roles as principals and agents in a multi-task situation. According to the previous analysis Swedish students were expected to show a strong preference for hierarchical mechanisms whereas Chinese students were expected to have preference for market mechanisms. The result supported these predictions.

Key words: Cultural dimensions. Cultural preferences. Coordination mechanisms. Market mechanism. Hierarchical mechanism. Globe report. Experimental study.

## INTRODUCTION

Why do managers choose one coordination mechanism before another? Different theoretical traditions answer the question in somewhat different ways. Contributions from organization theory and the contingency tradition suggest that the choice depends on various critical characteristics of the organization and its environment and identify these characteristics, for example work-dependencies, technologies and business environments. A similar approach is given by the New Institutional Economics (NIE). It starts with the assumptions of bounded rationality and opportunism and analyses the coordination mechanisms of markets and of hierarchies. In a given transaction one of the two alternatives will have the lowest transaction costs (coordination costs) and thus provide the most efficient solution. Transactions with externalities and few possible exchange partners can, for example, explain why hierarchies replace market mechanisms.

These theoretical approaches however neglect the possibility that personal preferences play a role in determining coordination mechanisms. Individuals belong to cultures and cultural dimensions show systematic differences in human preferences. Cultural aspects might therefore provide additional understanding to why certain mechanisms are chosen. This paper has the purpose to examine such possible biases influencing preferences in the choice of market versus hierarchical coordination mechanisms. Will managers from two different cultures, *ceteris paribus*, use different coordination mechanisms because of their cultural bias?

To investigate the question, cultural characteristics are identified and analysed, based on the Globe report (House et al, 2004). The Globe report identifies nine dimensions of culture and analyses ten cultural clusters around the world in these dimensions. The aim of this paper is to develop propositions about how the choice of coordinative mechanisms is affected by the

identified cultural dimensions and to develop propositions about cultural biases in the choice on coordination mechanisms in different cultural clusters. A first attempt to test the suggested propositions is conducted through an experimental study. The experiment is designed to test the predictions that Chinese managers will have cultural biased preferences that increase their comparative use of market mechanisms, and that Swedish managers will have cultural biased preferences that increase their comparative use of hierarchical mechanisms. The two hypotheses are tested in a controlled situation where Chinese and Swedish students are asked to perform roles as managers and workers (principals and agents), and agree on which coordination mechanism to use. The work undertaken is of a multi-task character which makes the choice between market and hierarchy less obvious from a contingency / NIE perspective, allowing for cultural influences.

## COORDINATION

Within the field of management studies and organisation theory, several coordination mechanisms are identified and discussed. This discussion was early summarised by Edström & Galbraith (1977) as a choice between co-ordination by centralisation, bureaucratisation and socialisation. Later contributions distinguish between centralisation, formalisation and socialisation (Bartlett & Ghoshal 1992). Several attempts has contributed to the development of a contingency perspective, analysing situational factors that are determining the choice of coordination mechanism (Mintzberg 1983 presents an overview of this approach).

A similar approach has been developed in the tradition of the NIE, focusing on the analysis of the choice between the price-mechanism of markets and the unified governance of hierarchies. Extensions of NIE has also identified co-ordination by "trust" or "ideology" as a

third option used in forms that has been named clans, networks or brotherhoods (Ouchi 1980, Braddach & Eccles, 1989, Powell 1991, North 1992).

Using the price-mechanism of markets implies that the agents are rewarded in direct connection to the results that have been created. The market mechanism is hence a coordination mechanism that focuses on outputs. The hierarchy, on the other hand, uses rewards linked to other measures than output, for example the obedience of orders and regulations and the kind of inputs that has been put into the process (i.e. the experience of formal qualifications of an employee, time spent by the employee in the firm etc). The direct market mechanisms provide strong incentives, encouraging the producer to create the output demanded, whereas the indirect incentives provided by the hierarchy are regarded to be weaker and more oriented to fulfil the requirements of the internal management.

The choice between external market exchanges and internal hierarchical coordination was early analysed by Coase (1937) as a choice determined by transaction costs. Neo-classical theory analyses the advantages of price in markets. If the distribution of information is symmetrical and internalized and there exist many possible alternative partners, the relative-price determined by supply and demand directs exchange parties to an efficient allocation. Strong productive incentives are created and the relative-prices allow co-ordination with a minimum of information required. Another, and more dynamic, advantage is that co-ordination through exchanges allows decentralised actors to use their dispersed specific knowledge for development with a multitude of competing experiments and an incremental process (Hayek 1945, Williamson 1985). Price or exchange between autonomous parties therefore has certain advantages as a co-ordination mechanism, due to its strong incentives and its use of dispersed knowledge and incremental change.

But transaction costs sometimes impose problems that hinder market exchanges, which explain the use of hierarchies. Such market failures occur for example when exchanges

are characterized by imperfect competition, public goods and externalities. One example is when one exchange-party invests particularly for another party, creating a situation of few partner exchange, discussed as asset-specific investments. Asset-specific investments coordinated within a hierarchy reduce the risk for opportunistic behaviour in markets and explains vertical integration in production (Williamson 1985, Alchain & Woodward 1987).

Another example is when firms hold assets such as unique knowledge which can be characterized as an excludable public good, difficult to transact in markets. Here coordination through market leads to transaction costs due to the information paradox (Arrow 1973) and due to difficulties to secure ownership rights, which explain firm expansion by horizontal integration (Teece 1982, Williamson 1985, Liebeskind 1996). Specific knowledge is a heterogeneous asset that explains competitive advantages (Penrose 1959:1980, Barney 1991) and therefore, control of knowledge-diffusion is crucial. Finally, co-ordination by authority has dynamic advantages due to the possibility for managers to monitor different parties to rapidly move into a new direction.

A third example of a situation when market mechanisms are abandoned is in the use of brand names. Brand names can be characterized as common corporate assets, of which the use of one member might cause externalities to others. This can be referred to as a problem of team-work and joint production. When individual contributions in a group are difficult to separate from each other, and everyone needs to co-ordinate with everyone else, an authority can act as a centre for communication. The authority can also make decisions and give sanctions, thereby reducing transaction costs for information and misdirected incentives in teams (Alchain & Demsetz 1972, Williamson 1975, Alchain & Woodward 1987). When central positions have information advantages a superior party can direct others to perform a radical change, which is a final argument for co-ordination by authority (Williamson 1991).

Co-ordination through the commands of an authority has, of course, also disadvantages compared to the price-mechanism. One disadvantage is the weaker and biased incentives, due to the fact that rewards do not directly correspond to their contributions to final results (Alchain & Demsetz 1972, Williamson 1985). Another disadvantage is the costs of hiring superiors, and the risk that superiors act in accordance to their own interests on behalf of the interest of others. These principal-agency problems raise the question of how to control managers and create efficient incentives (Fama 1980, Fama & Jensen 1983, Williamson 1985).

One way to reduce these problems is to introduce market-based mechanisms into the hierarchy. If problems of measuring output can be overcome, internal market mechanisms can be established, as illustrated by the design of profit centres and the use of piece-rate payments to employers. But, just as external market relations are hindered by few partner exchanges, public goods and externalities, the same problems within firms imposes measurement problems and obstacles to the use of internal market mechanisms. Again this gives arguments for using weaker input-oriented incentives such as lump-sum payments.

The two different kinds of mechanisms and incentives will encourage different kinds of behaviour which create trade-offs that managers needs to handle. Roberts (2004) discuss the problem and describe the behaviour encouraged by internal market-oriented incentives as “initiative” and “explore”. Strong output-oriented incentives make agents to focus on improving their own performance and to search for new ways of improving their results, strong market-oriented incentives that focus on output will thus encourage initiative actions and innovative explorations. On the other hand, weak and input-oriented incentives encourage a more “cooperative” behaviour and might be a way to secure “exploitation”. With such incentives the agent can be more encouraged to work with others to improve the overall performance, to participate in team work and to create positive externalities and public goods

within the firm. By rewarding input the participant can also be motivated to behave in a predictable way, securing the exploitation of earlier developed skills and know-how.

Roberts also notes that the frontier of trade-off between behaviour characterized by for example initiative and cooperation can be expanded by the existence of trust. Trustful relations between principals and agents can allow for both more initiative and cooperation. This implies that the trade-off between exploration and exploitation also might be expanded if trust develops between the involved parties.

A situation that might be especially problematic occurs in situations with multitask problems, as discussed by Holmström & Milgrom (1991). This problem occurs when the individual or organizational unit responsible for performance face multiple objectives. The problem arises when some tasks results in outputs that are measurable, and hence adequate for using market-based mechanisms, whereas other tasks have outputs that are difficult to measure and therefore should be coordinated by hierarchal mechanisms. The coordination problem facing multi-task problems can be handled in various ways, from changing the tasks of the individual or unit, balancing strong and weak measures or, if the strong incentives makes the balance roll over, to use only weak incentives. If the weak incentives do not provide enough encouragement for initiative and exploration, they might be combined with high-commitment efforts to develop trust (Roberts 2004).

### Culture and coordination mechanisms

NIE criticize traditional neoclassical economic theory for not providing a theory that identify and explain the institutional requirements for a market system, and for not providing a theory that identify and explain the “failures” that makes other mechanisms than the market efficient for coordination. NIE have filled this gap by analysing how different sets of formal



and informal institutions influence economics behaviour and by analysing why sometimes the market is replaced by the hierarchy, as illustrated above. But NIE ignores that the choice of mechanism also might be determined by the individual perceptions and preferences among participants involved. If managers and employees prefer market-based mechanisms there would, *ceteris paribus*, be a stronger tendency to design organizations into single-task activities and to make the outcome measurable, allowing for shifting the balance of incentives towards more piece-rate payments, profit centres etc. If managers and employees have preferences in using hierarchical modes of coordination there would, accordingly, be more units for group work and collaborations and more lump-sum payments and incentives correlated to indirect, input correlated, measures of production.

Neglecting such personal idiosyncrasies is, of course, understandable if personal preferences are unsystematic and unpredictable. But individuals belong to cultures and cultural dimensions show systematic differences and affect behaviours of all kind. The importance of culture has been observed in NIE at a societal level, as illustrated by North who distinguishes between formal and informal institutions (North 1984, 1990, 1992). Formal institutions are the explicit laws and regulations that impose rules for individual behaviours. Informal institutions are the norms, conventions and codes of conduct that are internalized in the minds of people. Another attempt to explain the impact of culture was presented by Williamson (2000). Williamson suggests an institutional analysis divided into several levels. At the highest and most slowly changing level (level 1) he identifies the social embeddedness of informal institutions. Customs, traditions, norms and religion illustrates institutions at these level, institutions that take centuries to change. Under that level, at level 2, Williamson identifies the institutional environment, the formal rules of the game. At this level the polity and judiciary decide the formal structure of property rights, a structure that takes decades to change. At a lower level (level 3) follows the institutions of governance, i.e. types of contracts

and coordination mechanisms which can be changed from one year to another. Finally, at the lowest level, level 4, Williamson identifies the resource allocation and employment which is determined by prices, quantities and incentives. Here change occurs continuously.

The theory of NIE thus provides a framework for identifying institutions at various levels and have made some attempts to study how these levels influence each other. The development of private property rights at level 2 will, for example, be crucial for the development of coordination by market mechanisms at level 3. But the theory of NIE does not provide an analysis of how the institutional development of informal institutions (level 1) might influence the choice of coordination mechanism (level 3). By introducing cultural differences in the theoretical analysis of coordination mechanisms therefore might provide additional understanding to why certain mechanisms are chosen. This is especially the case in situations where there is no clear and distinct “best choice of coordination mechanism”, that is cases when managers have to balance advantages and disadvantages between different alternatives and find a trade off between market and hierarchical solutions.

## CULTURE AND COORDINATION

What dimensions in culture might affect the choice of coordination mechanisms? A framework for analysing culture was early suggested by Hofstede (1994). Hofstede distinguishes between the dimensions of power distance, individualism/collectivism, masculinity/femininity and uncertainty avoidance. A problem in the study of Hofstede is that the identified dimensions comprise several different aspects of culture. For example is femininity in the analysis of Hofstede a dimension that captures both degrees of gender equality and assertiveness. Other critical remarks concern that the studies of Hofstede are becoming old and that they were made in one special organization (IBM). A more developed and updated

contribution is provided in the GLOBE study of 62 societies (House et al, 2004). It is partly based on the contribution of Hofstede, but provides an extended framework of nine different dimensions and provides an up to date investigation about the situation in today's societies. The cultural dimensions of the GLOBE study are presented below.

Table 1. Cultural dimensions of the GLOBE studies.

<i>Cultural dimension</i>	<i>Characteristics...</i> ( The extent to which society encourages)
Performance orientation	Emphasis on performance excellence and improvements. Preference for challenge and being in control of ones destiny
Assertiveness	The individual express and communicate one's thoughts, feelings, beliefs and rights.
Future orientation	Future-oriented behaviors such as planning and delaying gratifications.
Humane orientation	Improving human conditions. Laws and norms emphasize and reinforce moral behavior
Institutional collectivism	Collective behavior and norms, rather than the enactment of individual freedom and autonomy.
In-group collectivism	Pride in membership of group members and general affective identification towards family, group, community and nation.
Gender egalitarianism	Men and women perform common tasks and are treated equally with respect to status, respect, privilege and rewards.
Power distance	Members of a culture expect and agree that power should be shared unequally and that power holders should be granted greater status, privileges and material awards.
Uncertainty avoidance	People seek ordiness, consistency, structure, formalized procedures, and laws to deal with naturally occurring uncertainty as well as important events in their daily lives.

(From House et al, 2004, p 164 ff)

Will cultural differences, as specified in the nine dimensions above, affect actors in society so that they prefer market-based strong incentives before weak hierarchal incentives, and vice versa? Probably different dimensions will have different impact and some dimensions might not have a large influence on the choice of coordination mechanisms. Below follows a discussion of which of the dimensions that will affect the choice of coordination mechanism and how the dimensions that influence coordination will tilt the balance between market and hierarchical mechanisms.

*Performance orientation.* A society with a strong emphasis on performance, excellence and improvements, and where individuals hold a preference for challenge and being in control of ones destiny, will probably prefer market oriented mechanisms before

hierarchal mechanisms. Market mechanisms are directly linked to results and safeguard that improvement in performance is rewarded. This is expressed in the following proposition.

*Proposition 1: A culture characterized by a relative high level of performance orientation will have a preference for using market-based coordination mechanisms.*

*Assertiveness* The possibility for individuals to express and communicate one's thoughts, feelings, beliefs and rights can be better fulfilled if market-based mechanisms are use, allowing the individual more autonomy in performance. Hierarchal mechanisms use authority and require degrees of individual subordination which might hinder assertiveness.

*Proposition 2: A culture characterized by a relative high level of assertiveness will have a preference for using market-based coordination mechanisms.*

*Future orientation* Future-oriented behaviour, such as planning and delaying gratifications, might increase the acceptance for using the weaker and indirect rewards used in hierarchical coordination mechanisms, if these rewards come after the results are created. But if the outcome of an activity is delivered in a distant future, market based incentives might be more accepted the more future oriented a society is. Future orientation will therefore probably not have a systematic influence on the choice of coordination mechanism.

*Proposition 3: The level of future orientation in society will not have a systematic impact on the choice of coordination mechanisms.*

*Humane orientation.* One can not claim that market mechanisms or hierarchical mechanisms are to prefer when it comes to improving human conditions. Both mechanisms

can lead to human improvements. Therefore humane orientation will not have a systematic influence on the choice of coordination mechanism.

*Proposition 4: The level of humane orientation in society will not have a systematic impact on the choice of coordination mechanisms.*

*Institutional collectivism.* A society that holds a preference for collective behaviour and norms, rather than the enactment of individual freedom and autonomy, will probably be more apt to use hierarchical mechanisms since such mechanisms are more group orientated and indirect than the more outcome-related and individually oriented market mechanisms.

*Proposition 5: A culture characterized by a relative high level of institutional collectivism will have a preference for using hierarchal coordination mechanisms.*

*In-group collectivism.* In a society with high pride in membership of group members and general affective identification towards family, group, community and nation, individuals on the one hand might be more group-oriented and therefore in favour of hierarchical solutions. On the other hand they might feel reluctant to join new groups, i.e. hierarchies that are outside their “in-groups”. The latter argument follows Fukuyama (1995) who claims that societies that are characterized by trustful relations mainly within families, clans etc, lack a general trust which hinders the development of a rich variety of organizations in society. This leads to the argument that societies with in-group collectivism will tend to prefer market mechanisms.

*Proposition 6: A culture characterized of a relative high level of in-group collectivism will have a preference for using market-based coordination mechanisms.*

Gender egalitarianism. One can not claim that market mechanisms or hierarchical mechanisms are to prefer when it comes to improving gender equality. Gender egalitarianism should therefore not have a systematic influence on the choice of coordination mechanism.

*Proposition 7: The level of gender egalitarianism in society will not have a systematic impact on the choice of coordination mechanisms used.*

*Power distance.* If members of a culture expect and agree that power should be shared unequally, and that power holders should be granted greater status, privileges and material awards, they will probably have a higher acceptance for the use of hierarchical mechanisms. Hierarchical mechanisms use more coordination by authority and individual subordination.

*Proposition 8: A culture characterized by a relative high level of power distance will have a preference for using hierarchal coordination mechanisms.*

*Uncertainty avoidance.* If people seek ordiness, consistency, structure, formalized procedures, and laws to deal with naturally occurring uncertainty they will probably have a preference for using coordination by hierarchical mechanisms. Hierarchical mechanisms provide more foreseeable rewards and formalized procedures.

*Proposition 9: A culture characterized by a relative high level of uncertainty avoidance will have a preference for using hierarchal coordination mechanisms.*

The culture of a society might have an influence on the choice of coordination mechanisms, and different aspects of the culture might, as the discussion above showed, tilt the balance in different directions. Below the developed propositions are summarized.

Table 2. The influence of cultural dimensions on coordination mechanisms

<i>Cultural dimension (high)</i>	<i>Will influence the choice of coordination mechanism</i>
1. Performance orientation	Market mechanisms
2. Assertiveness	Market mechanisms
3. Future orientation	No influence
4. Humane orientation	No influence
5. Institutional collectivism	Hierarchical mechanisms
6. In-group collectivism	Market mechanisms
7. Gender egalitarianism	No influence
8. Power distance	Hierarchical mechanisms
9. Uncertainty avoidance	Hierarchical mechanisms

Based on the suggested propositions we now can identify the characteristics of societies with composite dimensions of culture in favour of using market mechanisms and, by reversing the propositions, societies favouring the use of hierarchical mechanisms. This is expressed in the following proposition.

*Proposition 10: A culture characterized by a high level of performance orientation, assertiveness, in-group collectivism a low levels of institutional collectivism, power distance and uncertainty avoidance will have a preference for coordination by the use of market mechanisms. A society with the opposite profile will have a culture that favours the use of hierarchical coordination mechanisms.*

Are there any “pure” market-oriented or hierarchy-oriented societies with the profiles expressed in proposition 10? The Globe report presented by House et al (2004) clusters countries of the world in ten clusters; Nordic Europe (*Sweden, Finland, Denmark*), Germanic Europe (*Germany-East, Germany-West, Switzerland, Austria, The Netherlands*), Latin Europe (*France, Portugal, French-speaking Switzerland, Spain, Italy, Israel*), Eastern Europe

*(Greece, Hungary, Albania, Slovenia, Poland, Russia, Georgia, Kazakhstan), Anglo (USA, England, Canada, Australia, Ireland, South Africa – white sample, New Zealand), Latin America (Ecuador, El Salvador, Colombia, Bolivia, Brazil, Guatemala, Argentina, Costa Rica, Venezuela, Mexico), Southern Asia (Philippines, Indonesia, Malaysia, India, Thailand, Iran), Confucian Asia (Singapore, Hong Kong, Taiwan, China, South Korea, Japan), Middle East (Turkey, Kuwait, Egypt, Morocco, Qatar), Sub-Saharan Africa (Zimbabwe, Namibia, Zambia, Nigeria, South Africa – black sample).*

The Globe report then summarizes the results of surveys made in these nations into three categories; high-score clusters, mid-score clusters and low-score clusters and divides the results between measure of practises (how it is) and measures of values (how one think it should be). Based on the propositions developed above these clusters can be categorized according to if they have cultural dimensions in favour for using market mechanisms or if they have a disposition for hierarchical solutions. The result is summarized below, using the measures for practises. Using measures of practises is based on the assumption that “how it is” says more about biases than what people think “should be”.

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Table 3. Cultural clusters and proposed preferences for coordination mechanisms.

<i>Cultural dimension</i>	<i>Preference for market mechanisms</i>	<i>Middle-score</i>	<i>Preference for hierarchical mechanisms</i>
Performance orientation	(High-score) Confucian Asia, Germanic Europe, Anglo,	Southern Asia, Sub-Saharan Africa, Latin Europe, Nordic Europe Middle East	(Low-score) Latin America Eastern Europe
Assertiveness	(High-score) Germanic Europe, Eastern Europe	Southern Asia Confucian Asia, Anglo, Sub-Saharan Africa, Latin Europe, Latin America Middle East	(Low-score) Nordic Europe
In-group collectivism	(High-score) Southern Asia, Confucian Asia, Latin America, Eastern Europe Middle East	Sub-Saharan Africa, Latin Europe	(Low-score) Germanic Europe, Anglo, Nordic Europe
Institutional collectivism	(Low-score) Germanic Europe, Latin Europe, Latin America	Southern Asia Anglo, Sub-Saharan Africa, Eastern Europe Middle East	(High-score) Confucian Asia, Nordic Europe,
Power distance	(Low-score) Nordic Europe	Southern Asia, Confucian Asia, Germanic Europe, Anglo, Sub-Saharan Africa, Latin Europe, Latin America, Eastern Europe, Middle East	(High-score)
Uncertainty avoidance	(Low-score) Latin America Eastern Europe Middle East	Southern Asia Confucian Asia, Anglo, Sub-Saharan Africa, Latin Europe	(High-score) Germanic Europe, Nordic Europe

The derived propositions and the composite dimensions of culture do not give a clear picture in favour or against a certain mechanism. No cultural cluster provides a “pure” fit with the propositions. Without knowing if the identified proposed causalities are valid and without knowing the weights of the various dimensions, there are few clear propositions to be made about the characteristics of different cultural clusters when it comes to cultural biases towards the choice of coordination mechanisms. However a first attempt to provide an overview and to study if there are any tendencies in the variations observed is to weight all dimensions equally. Below the degree of cultural bias towards market versus hierarchical mechanisms is measured

by the use of a scale where a preference for market mechanisms in one dimension receives + 1, a middle score receives 0 and a preference for hierarchical mechanisms receives – 1. The resulting summarized scores are presented below, scoring from -3 for the most hierarchy-biased cluster to + 3 for the most market-oriented cluster.

Table 4. Cultural clusters and proposed preferences for coordination mechanisms.

<i>Scores</i>	<i>Score</i>	<i>Cultural clusters</i>
Cultural preference for market mechanisms	+3	Latin America
	+2	Middle East, East Europe
	+1	Confucian Asia, Germanic Europe, Southern Asia, Latin Europe,
	0	Sub-Saharan Africa, Anglo
	- 1	
Cultural preference for hierarchal mechanisms	- 2	
	- 3	Nordic Europe

The table indicates that different cultural clusters hold different biases, which is summarized in the following proposition;

*Proposition 11. If cultural clusters are ranked according to their bias for using market versus hierarchal coordination mechanisms, Latin America has the strongest bias for market mechanisms, Middle East and East Europe has the second strongest bias and Confucian Asia, Germanic Europe, Southern Asia and Latin Europe has the third strongest bias for market mechanisms. The Sub-Saharan Africa- and the Anglo clusters are ranked in-between. Finally, Nordic Europe has a strong bias towards choosing hierarchical mechanisms.*

## AN EXPERIMENTAL STUDY

Is there empirical support for the conclusion that cultural preferences influence the choice of coordination mechanisms? How can empirical studies be designed to test the developed propositions and to study if the different cultural clusters have the biases suggested? A possibility would be to use questionnaires and map differences in preferences for various coordination mechanisms in all the studied nations and to correlate the results to the cultural characteristics identified in the Globe report. Or one could measure the actual use of coordination mechanisms in a certain industry, present all over the world, and study if there are actual differences. That kind of approaches would require research efforts beyond the scope of this paper.

Another possibility could be to use experiments; letting people from different cultural clusters coordinate exactly the same tasks in a controlled way and observe variations in the use of coordination mechanisms. Experiments are not often used in business research but is an interesting alternative to more traditional surveys and case studies. In this paper such an approach was tested in a limited scale. The study that was conducted focused on only two nations, Sweden and China, and used an experimental approach to study if variations in biases could be observed. Following proposition 11 the hypothesis was that Sweden, as part of the cluster of Nordic Europe, would show a strong bias for using hierarchal mechanisms of coordination and that China, a part of the Confucian cluster, would show a weak bias for using market-based mechanisms.

The experiment was conducted during the autumn semester of 2006 and was designed as follows. Production was simulated in which two groups of students, one Chinese and one Swedish group participated. Each group consisted of ten participants, totally involving twenty individuals. The students were selected on a purposive / self-selecting sampling basis (partly due to the limited number of Chinese students at the university). All

students were studying at Kristianstad University, Sweden, during the fall semester 2006. (The Chinese students studied as exchange students). All students were in the same age range (20-25 years) and where studying business subjects at the same level (Bachelor). Choosing similar students reduced the possible influence of other possible factors due to differences in age, educational level and professional specialization.

Ten students in each group were divided into five pairs and the individuals in each pair were given the roles one principal and one agent. The principal acted as the manager of a company, offering the agents contracts, supervising the work and accepting or rejecting the quality of the product produced by the agent. The agent performed the tasks required and accepted or rejected the offered contracts. The principals and agent continuously agreed on which type of contract to use, a piece rate payment represented market coordination and a fixed sum payment (with a possibility to add a bonus) represented the hierarchical alternative. Each of the groups performed work in six periods and each period lasted for five minutes. Before each period a contract was negotiated. The principals presented the agent with a contract giving him the option of either accepting or rejecting it. If the contract was rejected, no task was performed during the period and a new contract was not presented until the next period. After each time period the quantity and quality of the achieved work were checked by the principals and also by the supervisor/customer.

The tasks performed by the agents were to watercolour drawn circles on papers in red and blue colours. Each agent had a set of watercolours, a brush a glass of water and a paper towel for performing the task. Papers, each with 28 printed unlined circles, were handed to the agent. The agent was not allowed to paint more than one circle in the same colour and the circles painted should be altered between red and blue.

The task was designed with both quantitative and qualitative dimensions, and the agent had to perform maintenance and direct work, with gave the assignments a multi-task

character. The task was made simple enough for allowing a rather high quantity under short time, but still it was restricted by quality considerations since the whole circle had to be coloured, all area covered and no paint was accepted outside the area. The requirements on changing of colours made the agent busy with maintenance work, keeping the watercolours and the brush clean and changing water and paper towels. By not maintaining the equipment the colours would mix which would lead to rejections. The idea behind this was that by creating a multitask situation the coordination mechanisms would not be obvious.

The experiments were supervised by three of the authors of this article. The supervisors had the role of being instructors and acted as the customer, deciding which products to buy from the principal. An imaginary currency was introduced, named “gold” (g), and the payment to the principal for an accepted product was 12 g for each accepted product. The principal and agent could then either agree on a piece-rate payment of 4 g for each accepted product or a fixed sum payment which was negotiable of 20 to 40 g for each period. The fixed sum contract could be combined with a bonus on 0-30 g depending on the agent’s performance. If there was no contract agreement the principal had to pay the agent a return of 25 g for the period. The compensation was introduced to make it possible for the agent to refuse contracts and still not come too far behind in the competition with others. A rejection of contract thus had larger impact on the principal than the agent. At the end of the game the result was summarized, the results were announced to the group and the principal and agent with the highest earned income were given awards.

The total production by the agents in the Swedish group was 242 products, of which 215 were accepted by the principals, of which 168 was accepted by the customer and sold. The total production by the Chinese agents was 274 products, of which 211 were accepted by the principals and 201 were accepted and sold to the customer. Each group performed work in totally 30 periods (6 principals/agents in each group coordinated 5 periods, in total each

group coordinated 30 periods of production). The result of the experiment is summarized below.

Table 5. Choice of coordination mechanisms in the experiment

<i>Group</i>	<i>Piece rate Quantity of contracts</i>	<i>Piece rate percentage</i>	<i>Fixed sum Quantity of contracts</i>	<i>Fixed sum Quantity of contracts</i>
Sweden	6	20%	24	80%
China	18	60%	12	40%

The Swedish group showed a strong preference (80%) for using the hierarchical mechanism of fixed-sum payments. The Chinese group showed a weak tendency (60%) to prefer the market mechanism of piece rate payments. The result supports the predictions made. The individual contracts chosen can be seen in table 6 bellow.

Table 6 Contracts chosen in Chinese group during the experiment

<i>Period</i>	<i>A</i>	<i>Principal/ B</i>	<i>agent C</i>	<i>D</i>	<i>E</i>
1	<i>Piece rate</i>	<i>Fixed</i>	<i>Piece rate</i>	<i>Piece rate</i>	<i>Fixed</i>
2	<i>Piece rate</i>	<i>Piece rate</i>	<i>Piece rate</i>	<i>Piece rate</i>	<i>Piece rate</i>
3	<i>Piece rate</i>	<i>Piece rate</i>	<i>Piece rate</i>	<i>Fixed</i>	<i>Piece rate</i>
4	<i>Fixed</i>	<i>Piece rate</i>	<i>Piece rate</i>	<i>Piece rate</i>	<i>Piece rate</i>
5	<i>Fixed</i>	<i>Fixed</i>	<i>Piece rate</i>	<i>Fixed</i>	<i>Fixed</i>
6	<i>Fixed</i>	<i>Fixed</i>	<i>Piece rate</i>	<i>Fixed</i>	<i>Piece rate</i>

Table 7 Contracts chosen in the Swedish group during the experiment

<i>Period</i>	<i>A</i>	<i>Principal/ B</i>	<i>agent C</i>	<i>D</i>	<i>E</i>
1	<i>Piece rate</i>	<i>Piece rate</i>	<i>Fixed</i>	<i>Piece rate</i>	<i>Piece rate</i>
2	<i>Piece rate</i>	<i>Piece rate</i>	<i>Fixed</i>	<i>Fixed</i>	<i>Fixed</i>
3	<i>Fixed</i>	<i>Fixed</i>	<i>Fixed</i>	<i>Fixed</i>	<i>Fixed</i>
4	<i>Fixed</i>	<i>Fixed sum</i>	<i>Fixed</i>	<i>Fixed</i>	<i>Fixed</i>
5	<i>Fixed</i>	<i>Fixed sum</i>	<i>Fixed</i>	<i>Fixed</i>	<i>Fixed</i>
6	<i>Fixed</i>	<i>Fixed sum</i>	<i>Fixed</i>	<i>Fixed</i>	<i>Fixed</i>

The two groups showed some other differences that are worth noticing. The total amounts of rejections by principal or customers were somewhat higher in the Swedish group, 31%, compared to 27% in the Chinese group. The amounts rejected by the principals were larger in the Chinese group (23%) compared to the Swedish group (11%). The productivity was somewhat higher in the Chinese group and somewhat higher when using a fixed sum payment. In the Chinese group the mean output was rather high independently of choice of contract. The mean output was 8,33 when using piece rate contract and 10,33 when using fixed sum contract. For the Swedish group the difference was large. When using the piece rate contract the mean output was only 3,33 whereas the mean output was 9,25 when using a fixed sum contract. In the Chinese group the amount of discarded products were about the same independently of choice of contract, 27% for piece rate, 26% for fixed sum contract. In the Swedish group the amount of discarded products were much higher when using piece rate payments, 55% compared to 28% when using fixed sum contracts.

Finally, some additional observation was made by when supervising the experiments, which might illustrate cultural differences. During the experiment the group of Swedes acted more quiet and calm than the Chinese group. The Chinese participants were more excited and the Chinese principals expressed clearly and loud, both in positive and negative ways, their opinions of the agents' work and production. The principals clearly were in control. In the Swedish group the principals were not communicating with the agents in the same active way, the agents seemed to have much more influence and acted more demanding. The sum of the total earned gold for the Swedish principals was also lower than the ones for the Chinese principals. The Swedish agents simply refused to work if the principals did not follow their terms in the contracts. The Chinese students showed an interest for the team performance whereas the Swedes were more interested in the individual outcomes.

## CONCLUSION

Theories on coordination identify contingencies that affect the choice of coordination mechanism but neglects systematic influence on individual preferences due to culture. Individual preferences might influence the choice of mechanism and the culture of society might have a systematic influence on the choices made, especially in situations where there is a trade off between market and hierarchical mechanisms and where the optimal solution is not obvious. Different societies develop different cultures and will hence have different biases, favouring different mechanisms. Market-oriented mechanisms might be preferred in cultures with high levels of performance orientation, assertiveness, in-group collectivism, and low levels of institutional collectivism, power distance and uncertainty avoidance. Societies with the opposite profile will have a culture that favours the use of hierarchical coordination mechanisms. Based on these propositions different cultural clusters in the world can be categorized in accordance to their coordinative biases. But this theoretical development needs to be empirically investigated before any more developed conclusions can be drawn. Using experiments might prove a fruitful approach to study choices made by actors in different cultures. A small experiment shows promising possibilities and supports the propositions that culture will affect choice of coordination mechanisms in the prescribed ways. The results show possibilities for further theoretical development and for empirical investigations. From a practical point of view, the identification of cultural biases might prove valuable for managers, operating international businesses in different cultural clusters.

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