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The Influence of Institutional Culture on the Formation of Pre-Regime Climate Change Policies in Sweden, Japan and the United States

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ABSTRACT: This paper tests the claims of cultural theory using the formation of climate change policies in Sweden, the United States, and Japan as case studies. The theory posits that any social group consists of three main cultural types: the egalitarian, the market-oriented, and the hierarchical. Though all groups contain elements of each type, one cultural type usually prevails, giving the group its unique decision-making character. This paper applies cultural theory at the national level, testing to what extent the theory is able to project how countries will respond in addressing the issue of global warming. The results suggest that cultural theory may be useful to those involved in developing international agreements, enabling them to formulate regimes which are compatible with various cultural styles.

KEYWORDS: climate change policies, cultural theory, greenhouse gases, Japan, Sweden, United States

I. INTRODUCTION

By the time they signed the Framework Convention on Global Climate Change in Rio de Janeiro, Brazil in 1992, many of the world's industrialised countries had already taken some unilateral measures to reduce emissions of greenhouse gases. This 'pre-regime' implementation on the domestic level had a significant influence on the development of the final agreement, determining to some extent its contents, and it continues to shape expectations as subsequent protocols to the agreement are negotiated.

Despite consensus by the developed countries on the need to address the problem of global warming, each country approached the greenhouse gas (GHG) issue very differently at home. Differences in framing the problem and devising and implementing GHG reduction strategies and in distributing the burdens of proposed reductions are attributable partly to variations in political cultures.

Cultural theory, introduced by Mary Douglas in the 1970s, offers a potentially useful means of understanding various policy-making paths. Traditional social science theory has divided modes of organising social life into two categories: market and hierarchy (Weber 1958); *Gesellschaft* and *Gemeinschaft* (Toennies, cited in Grendstad 1990); mechanical and organic (Durkheim, cited in Grendstad 1990), to name a few of the better-known dichotomies. Cultural theory goes beyond this approach to posit that all social systems consist of four major cultural types. It is the mixture of these types that imbues a given society with its unique cultural characteristics. The four ideal cultural types are most commonly referred to among cultural theorists as egalitarianism, hierarchy, individualism, and fatalism (Douglas 1970).¹

Originally, cultural theory was intended to apply at the level of face-to-face interaction. However, this analysis tests the validity of the theory on a national scale, since decisions affecting greenhouse gas emissions are ultimately made at the micro level (firms and households) and then reflected at the national level in the institutions in which people participate. While it is the interaction of the four styles that shapes the nature of public institutions and decision-making, national political cultures may well be overdetermined by one characteristic cultural type. This is not to suggest simply that national culture is dominated by one style to the exclusion of the others, but rather that as a whole, one style may exhibit predominant characteristics.

Egalitarians are characterised by their emphasis on equality, cooperation and consensus. They are highly averse to all forms of risk and consider nature to be fragile and endangered; they argue that resources must be preserved so that future generations may also enjoy them. Decision-making within the egalitarian system is based on the strength of the logic of a particular argument and its ability to bring members to agree upon it. Most egalitarians further believe in the equal distribution of wealth and environmental risk. This group also rejects large-scale, capital-intensive technologies (Rayner 1984). Sweden, with its decentralised political structure and long traditions of social welfare, social pluralism, and community-based decision-making, exemplifies the egalitarian/collectivist culture.

Hierarchies are distinguished by their preference for bureaucratic procedures and control. Emphasis is on the procedures of decision-making. Power in hierarchical societies tends to be centralised, and risk is routinised whenever possible (Rayner 1984). There is also a high level of trust in government and other institutions; disagreement is fragmented and accommodated. They are biased toward large-scale, high-technology approaches that require specialised knowledge and centralised direction (Schwarz and Thompson 1990). Because of their preference for institutions, hierarchies are usually oriented toward long-term approaches to policy-making. Japan, with its centralised national decision-making structure, its emphasis on managerialism, and its traditionally future-oriented, long-term approach to policy, is an example of a hierarchical culture.

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Individualist cultures encourage competition and entrepreneurial activity. Emphasis is on maximising benefits to the individual, who has great freedom within society to pursue his/her own goals. Often one finds adversarial relations between competing interests. Like the egalitarian, the individualist will reject centralised control, but unlike egalitarians, individualists are not risk-averse but rather risk-calculating. In other words, these people often welcome what the other groups view as risky if they perceive that such phenomena can offer the possibility of personal or financial gain. This attitude encourages experimentation in the face of uncertainty (Thompson et al. 1990). Competitive pressures give rise to the short-term focus that is characteristic of market cultures. Because of its traditional preference for market mechanisms and emphasis on individual freedom and rights, the United States is a good example of this type of institutional culture.

The final cultural type, the fatalist, consists of alienated individuals who do not participate extensively in the social system. These people believe they have little control over events. Their main strategy is simply coping with whatever situation they find themselves in. Because the nations best exemplifying these cultural characteristics have had little experience in implementing global warming policies, however, the fatalist approach is not analysed in this study.

Viewing climate change policy through the lens of cultural theory may make it possible for us to better understand the process of policy implementation within a given country as well as the country's choice of policy to reduce the specific threat of global warming. Unlike the traditional political economy approach to comparing countries' policy choices, cultural theory recognises that culture constrains societal responses to challenges. For example, political scientists have often used a comparative political economy approach to explain why US regulations, which are often stricter than those of other countries, are not necessarily more effective (see Vogel 1986; Brickman et al. 1985; Kelman 1981). They conclude that the US system of government fosters discord among the competing interest groups, thereby hampering policymakers' ability to develop effective, implementable policies. Each of the studies recommends that the United States emulate other countries' approaches. Such recommendations may not be helpful, because the organisational behaviour and policy-making processes are part of a society's culture, and as such are usually not readily translatable. Cultural theory may therefore be a useful tool for projecting the success of various policy instruments within a given country and for identifying the major decision-making groups in each country.

This paper demonstrates how differences in culture can affect political outcomes. National decisions and policy actions are to a large extent driven by institutional cultures, which are very difficult to change. This paper builds on various political economy studies (Grubb et al. 1991; Andresen 1993; Fermann 1992), but goes one step further in offering an explanation of how social and cultural values influence the countries' decision-making processes and help determine outcomes.

This study will compare the design and implementation of greenhouse gas reduction strategies in three countries – the United States, Sweden, and Japan – prior to the signing of the Framework Convention on Climate Change of 1992. If cultural theory can in fact project differences in national approaches to policy implementation, it may enable negotiators to develop international treaties that are compatible with different cultural styles. The paper establishes a series of five tests for cultural theory; describes the climate change policies in Sweden, the United States and Japan prior to the Rio Convention; analyses whether or not cultural theory is a useful tool in projecting national behaviour; and presents conclusions.

II. PREDICTIONS OF CULTURAL THEORY

Can cultural theory accurately project how countries will respond to international policy issues? The theory will be tested using five questions:

1. What does the theory predict about how countries will view their role in a *global commons problem*?
2. What does the theory predict about the nature of *the policy-making process* within each society?
3. What does the theory predict about the country's likely *choice of policy instruments*?
4. What does the theory predict about the *speed of policy implementation*?
5. What does the theory predict about how countries will view *the role of technology* in solving environmental problems? And if there is a role, where does the drive to innovate originate?

Global Commons Problem

The essence of the global commons problem is that the world's resources are limited and shared, and that each country will want to maximise its portion of the wealth. Consequently, each nation has an incentive to let other countries bear the burden of global environmental protection (in this case, greenhouse gas abatement measures).

Cultural theory suggests that egalitarian cultures, with their future-oriented, intergenerational focus, will strive to prevent further environmental degradation for the benefit of succeeding generations. This type of society will believe that the world's resources should be evenly distributed, and all countries bear equal responsibility for maintaining the commons. The egalitarian society will therefore take an aggressive approach to dealing with environmental problems and will be eager to act on a global level.

Market cultures, on the other hand, will maintain that resources should be

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allocated on a first come, first served basis: those who first gain access to common resources have the right to control them; relative prices will determine consumption patterns. Market cultures also believe that global systems are resilient; they will only act on a commons problem if it is in their best economic interest to do so. (i.e., if the costs of action outweigh the benefits, this culture will not change its behaviour). Market society also tends to be oriented toward the short-term. This is because market thinking yields interest and discount rates, concepts which favour the near-term over the future. Because they tend to have a short-term focus, moreover, market societies are less concerned with the welfare of future generations. For these reasons, such cultures will be less inclined than egalitarians to respond cooperatively on global issues.

Because hierarchies tend to routinise risk and are reluctant to upset the status quo, they will be slow to respond to the threat. However, once the decision to act has been made, the hierarchy will allocate resources to combat the problem based on the bureaucracy's measured appraisal of needs. The response will be centralised, technocratic, and conservative.

The Policy-Making and Implementation Process

Cultural theory suggests that in an egalitarian-dominant system, the policy-making process will involve considerable debate among a wide range of actors as the group struggles to obtain the consensus necessary to support a course of action. The policy-making process may be fractious, but since this type of society values solidarity and cooperation, different points of view will eventually converge through compromise.

In a market culture, emphasis is on maximising benefits to the individual. Because less value is placed on the welfare of the overall society, like-minded groups compete with each other to implement their agendas and are much less willing to compromise on issues of national concern. The policy-making process is open to all and will therefore be contentious and discordant.

In a hierarchy-dominant society, the process lacks the complexity of the other two societies because it is driven by major actors in a top-down, streamlined fashion. Once a powerful faction decides on a course of action, policies can be quickly implemented. While the hierarchical society values the presentation of sound scientific arguments, it generally does not encourage stakeholder groups to join in the debate, which simplifies the process considerably.

Choice of Policy Instruments

In an egalitarian-dominant society one would expect to find a combination of information and regulation as the primary policy instruments. Information activities can include advertising or educational campaigns, training programmes, media coverage of government activities, and persuasion of key decision-makers. The goal is to bring about the consensus that is so integral to egalitarian societies and to influence the behaviour of individuals in a bottom-up fashion to

correspond with larger social objectives. Regulation is used to keep polluters in check, and an egalitarian culture emphasises the *uniform application* of regulations, since the exercise of discretion by either the regulators or the regulated would violate principles of strict equality (Rayner 1991).

In a market-oriented society one would expect market mechanisms, such as tradeable permits and price incentives, to be the primary policy instruments. These measures leave the decision of whether and how much to pay for a safe environment, to the discretion of individual firms and consumers. Market cultures will also favour research and development, since this is compatible with the society's drive to innovate.

Hierarchies may be expected to favour a combination of command measures and fiscal incentives. Because of their preferences for order, procedure, and control, they will be inclined toward regulation. However, these societies are often sympathetic to the concerns of the organisations and individuals they must oversee, so they will also support the use of fiscal incentives, which leave some implementation decisions to the discretion of the individual firms. Thus, application of restrictions will not be uniform, but instead will be distributed unevenly throughout the society.

Speed of Policy-Making and Implementation

From an egalitarian society, assuming that the required consensus already exists, one would expect quick implementation, with all actors working together to ensure successful execution of the agreed-upon regimen. This is a strong contrast to the situation in a market-oriented society, where the contentious policy-making renders implementation very slow, even after a policy has been selected. Those who disagree with a final policy choice are likely to challenge it, e.g., through time-consuming, adversarial legal proceedings. Such a system often leads to gridlock, and hence to actions that further delay difficult decisions. As a result, the final policies of market cultures are often viewed by other countries as weak and ineffectual. Typically, in a hierarchical culture, a 'top-down' orientation means that implementation is swift, because the powerful organisation at the head has great authority to push through the desired policy measures. Resources can be quickly mobilised to serve the cause.

The Role of Technology

Because egalitarian cultures view nature as endangered, cultural theory projects that these societies will not rely heavily on technological solutions in managing global problems. Rather, they will advocate changing the relationship between humans and their environment with less human intervention in ecosystems. However, when they do apply technology, they will prefer small-scale, decentralised technologies. Market cultures, by contrast, will rely heavily on technology to solve environmental problems and reduce uncertainty regarding the seriousness of any potential threats. Innovation, driven by the free market, is

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viewed as an important key to success; individual firms will have discretion to determine which technologies will most efficiently mitigate environmental problems. Hierarchies will likewise take a positive attitude toward technology as a means of reducing uncertainties, creating solutions, and generating the information by which government decisions will be made. However, in this type of society, the government will be the primary sponsor of large scientific Research and Development programmes and will make decisions about technology investment. It will favour large-scale, centralised technological solutions.

III. GLOBAL WARMING POLICIES IN SWEDEN, THE UNITED STATES AND JAPAN

The following section describes how global warming policies were designed in Sweden, the United States and Japan. It focuses not only on the policies themselves, but also on the motivations that led each country to address the climate change issue and to select the policy measures it did.

Sweden

Sweden's institutional decision-making culture is dominated by the collectivist/egalitarian cultural type, with a strong focus on across-the-board social welfare. Equality and moderation are Swedish ideals; society looks askance at people who stand out too much from the rest of the group. The commonly-used word *lagom* in Swedish expresses this preference for restraint and social balance. *Lagom* means, roughly, just the right amount – not too much and not too little to satisfy both one's own needs and the requirements of the larger society (Hampden-Turner and Trompenaars 1993).

Sweden is also very oriented toward consensus, accommodation, and consideration for others. Within the Swedish parliamentary system, the so-called 'remiss' procedure allows government organisations, non-governmental organisations, firms, and municipalities the opportunity to review and comment on legislation proposed in the parliament with the result that the measure can pass smoothly. Indeed, parliament becomes in effect a rubber stamp for legislation that has been decided on long before through negotiation by interested parties (Loefstedt 1993).

Because Sweden is a small country where members of parliament, industry, and nongovernmental organisations (NGOs) often know each other, lobbying is done very informally through personal networks. This informal system of networking is facetiously referred to as 'brotherhood corruption'. Both business and environmental groups employed it to influence the government stance on the global warming policy debate.

Sweden had long been active on the science side of the climate change issue. On the domestic policy front, however, it was not until 1988 that global warming

received serious consideration in the Swedish parliament, the *Riksdag*. The reason for the relatively late action on the climate change issue was not lack of public interest, but rather great national concern about the country's heavy reliance on nuclear energy. The question was, how should Sweden reduce emissions of greenhouse gases without relying more heavily on nuclear power, the main alternative to fossil energy?

The *Riksdag* announced the national policy on climate change in 1988. The broad goal was to stabilise greenhouse gas emissions at 1988 levels by the year 2000. To accomplish this, parliament initiated a climate change strategy consisting of two major elements: (1) a national energy strategy aimed at reducing emissions of CO₂, and (2) a carbon tax designed to reduce demand for fossil fuels. The global climate change issue thus marked the beginning of a new era in Swedish environmental policy making, in that for the first time fiscal incentives were used as important policy instruments to encourage industry to reduce emissions (Swedish Ministry of the Environment 1991).

The carbon dioxide tax was controversial. Business argued that Sweden should not impose a carbon tax until other European countries had also done so. Since nearly half of Swedish industrial production is exported to Europe, industry feared losing its competitive edge. One of the major participants in this debate was the Federation of Swedish Industries (Svenska Industriforbundet), an umbrella organisation for manufacturing groups. This organisation, along with various other industrial groups, lobbied parliament to reject the carbon tax.

Predictably, environmental groups took the opposite position. They lobbied parliament on behalf of a carbon tax and received strong support from the Centre and Left parties. In a society which is accustomed to high levels of taxation, the notion of a carbon tax was not strongly opposed by the *Riksdag*, especially since a majority of Swedish parliamentarians come from public sector backgrounds. In the end, the *Riksdag* reduced income taxes, broadened the VAT to apply to all forms of energy, and added CO₂ and sulphur dioxide taxes. However, some concessions were made to industry. The carbon dioxide tax, which went into effect in early 1991, protected energy-intensive industries such as cement, pulp and paper, iron and steel, and chemicals, from high taxes. As a result of further tax reform in 1993, however, this loophole was to be closed in 1996, when all branches of the manufacturing sector were to become subject to uniform carbon taxation (Swedish Ministry of the Environment 1994a). Tax rates on electricity also vary between regions in Sweden, owing to differences in local policy (Bohm 1994).

The second element of Sweden's pre-Rio climate change policy was its national energy strategy. In 1991 the *Riksdag* passed its 'Interparty Agreement on Energy Policy', which called for increased energy conservation and energy production using fuel sources that have little impact on climate. This policy encouraged conservation and the use of renewable energy sources by offering investment grants to facilities that utilise renewable energy (Government of Sweden 1991a).

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As part of its energy strategy, the Swedish government also launched an ambitious programme of research and development. The 1990 Energy Research Bill had three fundamental goals: to establish fundamental competence and expertise; to facilitate the changeover of the country's energy system to allow the phase-out of nuclear power; and to establish greater awareness of the effects of energy systems on climate and the environment.

Further evidence of the seriousness with which Sweden regarded the climate change issue is the fact that at the ministerial conference at Noordwijk in the Netherlands in 1989, Sweden was one of the nations arguing for protocols containing specific commitments to reduce CO₂ emissions. This stance was vigorously opposed by the United States and ultimately defeated in the final Framework Convention on Climate Change.

The United States

The United States is an example of a market/individualist decision-making culture. In contrast to the situation in many other nations, the individual in American society takes large responsibility for his own wellbeing and resents government attempts to restrict his freedom or his ability to make choices. Perhaps the French historian Alexis de Tocqueville described this American individualism best when he said, 'In all matters concerning himself, alone he [the individual] remains the master; he is free and owes an account of his actions to God alone. From this derives the maxim that the individual is the best and only judge of his own interest and that society has no right to direct his behaviour unless it feels harmed by him or unless it needs his concurrence' (de Tocqueville 1835).

The United States' cautious approach to the climate change issue was nearly the opposite of Sweden's swift response; many Americans believed that aggressive climate change policies could upset the US economic structure, forcing major changes in industrial processes and lifestyles. In addition, the contentious nature of the policy debate, in which many opposing views were put on the table, precluded the formulation of any strong policy measures. Thus, the major policy instruments were research and, to a lesser extent, voluntary measures.

The US policy-making process is characterised by its transparency. The system allows interested parties to make their views known on important policy questions. The debate on climate change saw a great deal of stakeholder activity. In 1989 there were 40 days of Congressional hearings on the subject of global warming (Dickson 1994). Testimony was heard from scientific experts, government officials, NGOs and industry groups.

Industry lobbies and other pressure groups played an important role in the national debate. Nearly every major industry and special interest in the US supports an office in Washington that can influence the policy-making process. These groups, well financed by their members, usually have strong contacts within Congress and/or the Executive Branch. They can also delay the policy-

making process by demanding further hearings and threatening litigation. With respect to the global warming issue, industry and its supporters opposed policy measures, such as new regulations and CO₂ taxes, that they felt could threaten profit margins. During the late 1980s, such groups lobbied Congress to reject measures that could weaken the competitiveness of US industry. They also initiated information campaigns to influence media and public opinion, arguing that predictions of climate change were exaggerated. As policy measures they tended to favour such noncontroversial options as research and tree-planting.

Environmental groups, on the other hand, were for the most part critical of US inertia on the global warming problem and argued that more aggressive strategies and commitments were in order. In addition to advocating reduced deforestation, these organisations also supported increased energy efficiency and greater reliance on renewable energy sources.

The US natural and social science community also strove to influence policy decisions. Using sophisticated computer models, scientists contributed to the debate by attempting to project the actual likelihood of global warming and its potential economic impacts. The most famous testimony was given by Dr. James Hansen of NASA before the Senate Energy Committee in June of 1988. At the time of his appearance, temperatures across a large part of the United States were nearly 100 degrees F, and a major drought was sweeping the agricultural states of the Midwest. Hansen declared that he was '99 percent confident' that global warming was related to the greenhouse effect (Newton 1993). Taking the opposite view was the George C. Marshall Institute, a Washington, D.C. think tank, which issued a report in 1990 indicating that policy responses to climate change were unjustified on the grounds that computer models are inaccurate. The Institute further claimed that improved computer modelling would make it possible to provide answers to any climate threats within five years (George C. Marshall Institute 1990).

A similar polarisation occurred among economists studying the results of detailed economic models, which were also a cornerstone of the US global change debate. 'Adaptationists' argued that society could adapt to changing environmental conditions through new technologies and other social advances. 'Mitigationists', on the other hand, argued that the threat of global warming was very serious indeed and that it would be necessary to take steps to reduce the emissions of greenhouse gases, since the risk of global warming is much greater than the costs required to control CO₂ emissions.

Government agencies likewise weighed in. During the Bush Administration, the Environmental Protection Agency (EPA) argued on behalf of aggressive CO₂ reduction strategies. Some representatives of the executive branch, including President Bush, on the other hand, opposed imposition of any substantive GHG reduction policies. This debate often turned ugly, with members of the Administration publicly sniping at one another (Andresen 1993).

The market-based orientation of the US is also apparent in the way in which the climate change debate was framed. Whereas in the Swedish case, the global

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warming issue was set in the context of a national debate around nuclear power and public safety, the global warming discussion in the United States was viewed in heavily economic terms, using econometric models in a cost-benefit ('top-down') approach, which implies that costs and benefits are determined according to how the affected individuals would value them (Linnerooth-Bayer and Davy 1994). While some NGOs tried to call attention to the negative impacts climate change could have on the powerless, the US policy debate virtually ignored a serious discussion of social risk.

Owing to this reluctance to implement forceful GHG reduction strategies having economic impacts, the United States adopted a 'no regrets' approach to global warming. This was based on the argument that some benign, non-controversial actions, such as tree-planting and energy efficiency improvements, should be undertaken so that, regardless of whether or not global warming proved to be a reality, no one would regret having taken those actions (Andresen 1993; Reinstein 1993). This approach was criticised by other countries on the grounds that it represented a time-buying tactic through which the United States could put off indefinitely taking potentially painful measures to reduce carbon dioxide emissions.

Research and development were the United States' primary policy instruments in its greenhouse gas abatement strategy. Research would be conducted both on technological solutions to CO₂ emissions and on the phenomena of global warming itself. In 1993, President Clinton reinforced US emphasis on technological solutions in the introduction to his Climate Change Action Plan, when he called 'not for more bureaucracy or regulation or unnecessary costs, but instead for American ingenuity and creativity to produce the best and most energy-efficient technology' (Clinton and Gore 1993). Central to this Plan was cooperation between government and industry to stimulate technology development in the private sector.

Thus, although awareness of the global warming problem was high in the United States, substantive policy actions were slow to materialise. What is more, US refusal to implement strong policy measures at home was accompanied by its refusal to commit to such policies internationally as well. On several occasions during international negotiations, the US refused to adopt targets and timetables for reducing CO₂ emissions and insisted that the Framework Convention on Climate Change be modified to remove such specific goals.

Japan

Japanese society is overdetermined primarily by hierarchical elements. Many experts on the Japanese policymaking system concur that Japan is dominated by an elitist triumvirate consisting of the professional bureaucracy, the leading political party (until recently, the Liberal Democratic Party), and leaders of big business. These three groups share the same social, economic, and educational, and ideological backgrounds and are usually united in goals and action, able to

control the decision-making process to the exclusion of outside individuals and groups, though outsiders are often allowed to participate in largely symbolic roles (Peterson and Wade 1985). Because of this closed, top-down system of governance, policy makers in Japan generally wield greater power than do their counterparts in other countries, including the United States and Sweden.

There is a seeming paradox in that, while Japan has a very hierarchical power structure, the Japanese pride themselves on the egalitarian nature of their society, which emphasises the importance of national consent in addressing major social issues. Agreement on many aspects of public behaviour is the norm, but this consensus often derives from social pressure to conform. The Japanese disparage strongly individualistic behaviour, and people are expected to adapt their attitudes and behaviours to the social norm. The government often plays a role in shaping public opinion. Thus, egalitarian tendencies are influenced to a large extent by hierarchical elements.

The Japanese research system is characteristic of a hierarchy. The Japanese Council for Science and Technology, consisting of the Prime Minister and ten other members, articulates an overarching science and technology policy, which establishes the basic principles to which all government agencies must adhere in developing their individual R&D programmes. This system contrasts to that of, for example, the United States, where fourteen individual Departments as well as several mission agencies each have their own internally-developed research agenda and budget.

Japan was late in picking up on the policy side of the climate change issue at home, and like the United States, its response was cautious. There were two reasons for this lack of action. First, no one pushed the issue to the forefront of the national agenda; neither government, NGOs, nor the scientific community devoted much attention to climate change until shortly before the Convention was signed in 1992. Second, Japan was hesitant to act alone on the climate change issue.

The environmental movement in Japan is particularly weak. The few environmental organisations that do exist concern themselves primarily with local and regional problems rather than with global issues. For example, Japan's small environmental movement focuses mainly on the risks associated with nuclear power. Because the Japanese policy-making process is so closed, moreover, it is difficult for stakeholder groups to influence politicians, although some advisory committees provide input on policy decisions to the government (Fermann 1992).

Like the environmental groups, the Japanese scientific community has tended to concentrate most of its resources on ground level air pollution and has traditionally not been heavily involved with global issues, although some climate change research was conducted on a small scale at various Japanese research institutions.

Government agencies were similarly detached from the global warming problem. An Environment Agency does exist in Japan, but this body was caught

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up in dealing with a rapidly growing case load of domestic pollution problems and was unable to devote much attention to global issues during the years when climate change was emerging as a major international issue (Schreurs 1994). The Japanese Environment Agency, established only in the early 1970s, was also quite weak in comparison with other government bodies, such as the Ministry of International Trade and Industry (MITI) and other ministries. The second reason for Japanese inaction on the climate change issue was that the government believed that Japan had already made a significant contribution to reducing global CO₂ emissions, since its energy efficiency level was already very high compared to other nations. By taking strong unilateral measures on the climate change issue, therefore, critics argued that Japan would be at a disadvantage relative to other countries. Consequently, the government postulated that Japanese action on the greenhouse issue would have to take place in the context of international activity. Policy makers argued that countries with the highest CO₂ emissions levels (e.g., the United States) should bear the greatest burdens for reduction.

A change occurred around 1988, mainly as a result of international pressures. Japanese leaders had long been sensitive to criticism from abroad that Japan aggressively pursued its own interests – primarily economic – while neglecting its international responsibilities (Weidner 1993). Government representatives were thus eager to promote a new image of the country as a world leader in the area of environmental protection and moved quickly to establish global environmental offices through which they could influence policy (Schreurs 1994).

In spite of an upgrade in status for climate change, efforts by the Environment Agency to introduce policies aimed at reducing carbon emissions were initially hindered by MITI's and industry executives' concern that policy actions to reduce carbon emissions might hamper economic growth and competitiveness. Japan's fears in this regard echoed those of the United States and Swedish business communities. Hence, Japan at first resisted international pressures to sign onto an international climate change agreement, and along with the United States and a handful of other industrialised countries, refused immediate policy action and instead proposed that more research be conducted.

Finally, in June of 1990 at the Second World Climate Congress in Geneva, Japan announced its *Action Plan to Address Global Warming*, which represented the basis for Japanese climate change policy and outlined a series of actions to be taken by the government and private sector in order to achieve desired CO₂ targets. The government, believing in the public nature of environmental protection, assumed primary responsibility for responding to climate change. The *Action Plan* relied heavily on such financial incentives as subsidies, tax breaks, and zero or low interest loans.

With regard to the energy supply sector, the Plan advocated improvements in energy efficiency and energy conservation measures as well as the use of energy sources having low or no CO₂ emissions. It likewise contained measures to enhance CO₂ sinks; to increase research and monitoring of global warming;

to develop and disseminate technology related to energy conservation and renewable energy sources and on technology to improve CO₂ emissions control, among other things. Japan chose not to adopt CO₂ taxes, owing to industrial and government concerns that such a tax may slow economic growth (Fermann 1994).

Indeed, a major pillar of the Japanese response to the global warming question has been research and development. Both government and industry believed that technology represented an important means to realise further reduction in CO₂ emissions (Tanabe and Grubb 1991). The Japanese government has traditionally put a great deal of emphasis on the role of technological innovation in responding to various social, environmental and economic challenges. Industrial policies initiated by the Japanese government as far back as the early post-war years (Watanabe 1994) and especially in the 1970s resulted in more efficient industrial processes and technologies and reduced emissions of sulphur dioxide and nitrogen oxide (NO_x).

Technology again became an important aspect of the Japanese response to the threat of climate change. At the end of 1992 MITI created its so-called New Sunshine Program, the goal of which was to reduce energy-related CO₂ emissions by 16 percent by 2010 and by 50 percent by 2030 over 1990 levels. It consisted of three main components, all involving research and technological innovation. This commitment to innovation was further solidified in 1990 when Japan established its Research Institute of Innovative Technology for the Earth (RITE), which aimed to develop 'a new system of industrial technology based on the perspective of harmony with the environment . . .' (RITE 1990).

Japanese industry followed government's lead on the climate change issue. Since 1990 many of Japan's largest companies have established global environment offices and have invested in environmental technologies. In 1991 the Federation of Economic Industries (Keidanren), Japan's most influential industrial organisation, announced its own voluntary programme to address climate change.

IV. ANALYSIS OF CULTURAL THEORY AS A PREDICTIVE INSTRUMENT

We have seen how the United States, Sweden, and Japan responded to the threat of global warming. To what degree did these actions correspond to the projections of cultural theory?

The Global Commons Question

One would expect that an egalitarian culture would take an aggressive approach to environmental problems, owing to a concern for the welfare of future generations. Of the three countries analysed here, Sweden was in fact the most

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willing to take action on the climate change issue and to call for changes in behaviour (in the form of energy taxes).

A market culture would be expected to be less interested in global issues for their own sake, but would be willing to act if it is not overly expensive to do so. What's more, market cultures view environmental risk as a legitimate cost of the entrepreneurial way of life. The United States behaved in a way that was consistent with this projection, in its disregard for commitments on global warming. The calculation of risk can be seen in the United States' extensive use of econometric models to rationalise policy decisions. In the end, the United States refused to commit to substantive policy measures, owing to uncertainty about the nature of the problem and the potential economic costs of various abatement strategies. This reluctance to act may also be a function of the market culture's short-term, present-oriented approach.

Hierarchies believe that environmental problems can be addressed through centralised government intervention aimed at coordinating economic and environmental objectives. Because hierarchies are inherently risk-averse, moreover, one expects caution in responding to environmental threats. Japan did react cautiously and was among the last of the major developed nations to make a commitment toward stabilising emissions of greenhouse gases. The Japanese response consisted of a major centrally-directed national CO₂ reduction strategy.

The Policy-Making and Implementation Process

In the case of egalitarian cultures, one expects that a wide range of views will be represented with emphasis on eventual compromise. Debate, based on information-sharing, indeed characterised the policy process in Sweden, with the country's largest environmental organisations arguing on behalf of a carbon tax on the one hand, and industry, represented by the Federation of Swedish Industries, on the other hand, arguing against such measures. While conflict clearly existed, both sides eventually reached a compromise without the level of discord so apparent in the United States.

Cultural theory projects that consensus is extremely difficult to obtain in a market culture, and in the United States we have seen how various actors responded to the threat of climate change, each with its own proposed set of goals and policy recommendations. The process was highly contentious, marked by long debates before Congress, within the scientific community, and in the press. No compromise was reached, and in the end, economic concerns took precedence over environmental concerns. This is consistent with what one might expect from a market culture, with its premium on individual values and financial interests.

The process of global warming policy development in Japan was similarly consistent with projections of cultural theory. Although there was some debate regarding the appropriateness of various proposed policy measures, most of this discussion took place within the government bureaucracy, and once the powerful

Ministry of International Trade and Industry got behind the issue, substantive policy actions quickly followed. The government adopted a top-down approach, under which MITI designed policies affecting most sectors of the economy.

Policy Instruments

In an egalitarian society, one would expect to find a combination of information and regulation. In fact, however, Sweden responded to the climate change issue by introducing economic instruments in the form of a CO₂ tax to supplement existing regulations. (This illustrates the strong market tendencies at work in Swedish society). No new regulations were imposed. Information also played only a minor role as a policy instrument in Sweden prior to the signing of the Rio Agreement in 1992. However, in 1993 the Swedish government allocated SEK 5 million for climate-related information and education to increase the level of knowledge among the general public concerning the effects of climate change and to educate them on preventive measures and the importance of individual behaviour (e.g., using public transportation, conserving electricity).

Owing to the individualist/market orientation ascribed to the United States by cultural theory, one would expect market mechanisms, such as tradeable permits and tax incentives, as well as research and development, to be the primary policy instruments. Specifically, tax breaks, designed to encourage behaviours by not taxing them, are likely to be most successful in market cultures, since in the United States the imposition of new taxes is usually vigorously opposed. Incentives can also be introduced at relatively little cost. Research and technology development became the linchpins of the US national climate change strategy; various presidents emphasised that new technologies would enable the country to respond effectively should the climate threat prove real.

Cultural theory tells us hierarchies may be expected to favour a combination of command and fiscal policy instruments. Because their orientation is top-down, they are inclined to adopt command measures, but the pragmatic reality is that governments must ensure industrial cooperation, so they will also introduce market mechanisms to appease industry. In fact, many industrial leaders have great influence with MITI and were able to ensure that industry's concerns were heard in the global warming policy debate. This resulted in Japan's heavy reliance on fiscal measures, such as tax breaks and low interest loans, as the major policy instrument to reduce emissions of greenhouse gases. However, in defiance of the theory's projections, Japan did not rely much on regulation to bring about change. Instead, the Japanese used a combination of fiscal measures and R&D.

Speed of Policy-Making and Implementation

With respect to speed, one would expect a great deal of variation between the three cultural types, with hierarchies and egalitarians moving quickly and market

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cultures moving slowly. Implementation of environmental policies in Sweden was in fact relatively swift. The *Riksdag* first debated the issue in 1988; the same year CO₂ reduction goals were established (though they were subsequently modified). Within three years a new CO₂ tax and a revised energy strategy designed to reduce CO₂ emissions were also in place.

In the United States by contrast, implementation was slow, mainly because no agreement was reached regarding the appropriate policy measures and the level of effort and expenditure needed to enforce them. A substantive policy measure with real commitments was not introduced until October of 1993, several years after the debate on climate change had commenced. In addition, the United States' main policy instrument, research and development, faced additional challenges on Capitol Hill, as legislators, heavily influenced by interest groups, debated the US budget for climate-related research. Like Sweden, Japan moved quickly on the climate change issue. The *Action Plan* was drawn up within two years after the issue came to public attention. Decision-making was mainly at the government level, leaving little room for disagreement from outside parties. Once the government had decided to react, it could move freely to implement the policies necessary to respond to the global warming problem. Government agencies undertook measures to reduce greenhouse gases, enhance carbon sinks, accelerate scientific research, and disseminate appropriate technologies.

The Role of Technology

According to cultural theory, an egalitarian culture will view environmental threats as sufficiently serious to warrant major behavioural changes and will not rely heavily on technology development to solve perceived problems. However, when these cultures do deploy technologies, they originate not from a large central bureaucracy, but rather from a host of disparate sources. Like the other two countries discussed in this paper, Sweden has an extensive climate change research programme as well as various programmes aimed at enhancing energy efficiency and developing alternative energy sources. In some areas of energy technology R&D, in fact, Sweden is a world leader. Most of these programmes are sponsored by the national government. In this sense, Sweden did not act in accordance with cultural theory's projections, although in the mid-1990s there are virtually no industrialised countries which do not have substantial national research and development programmes.

Market cultures believe that new advances in science and technology will overcome potential threats to the environment. The United States emphasised research and development as a means of both reducing uncertainty about the global warming problem and reducing GHG emissions through new environmental technologies. While government is heavily involved in funding research and technology development, much of the innovation actually takes place in the private sector, where the market guides industry's technology investment

decisions. The United States has historically refused to implement an industrial policy to decide which industries should be developed, further indicating a US commitment to laissez-faire capitalism and market principles.

Cultural theory implies that hierarchies will tend to regard environmental problems as serious but manageable through centralised government intervention. Such attitudes can indeed be ascribed to Japan, which through its centralised bureaucracy acting through MITI, developed a comprehensive, long-term plan for dealing with the climate change threat. Technology was viewed as having a major role in mitigating environmental threats, and the Japanese response called for a large-scale, technology-based research and development. In contrast to the United States, the impetus for innovation in Japan originated within the government bureaucracy.

Limitations of Cultural Theory

Thus far cultural theory has quite accurately projected countries' attitudes and behaviours in several key areas. However, the theory does have limitations. For example, Sweden's primary policy instrument vis à vis global warming was taxation, but the CO₂ tax levied contained many loopholes for industry. In this sense Sweden behaved much like a market culture. Similarly, the United States exhibited some very strong hierarchical tendencies, and the important role played by individual actors cannot be overlooked. President Bush's powerful Chief of Staff, John Sununu, for example, exerted a strong influence on the climate change policy process prior to Rio. Because he personally did not believe in the possibility of anthropogenic global warming, Sununu was able to undermine the efforts of other government officials, such as representatives from the EPA and DOE, who advocated a stronger climate change policy (Andresen 1993).

Political parties in the United States also are associated with certain policy preferences. Republican administrations, such as those of Reagan and Bush, may be more likely to favour market mechanisms than are Democratic administrations, such as the Carter Administration, which was known for its more regulatory approach to environmental policy. Democrat-led governments often resemble egalitarian cultures in their desire to rein in unrestrained capitalism and promote a more equitable distribution of national wealth. Similarly, Japan and Sweden also exhibited traits normally associated with a different cultural type – a market culture – in their use of market mechanisms to reduce emissions. Owing to such contradictions, then, cultural theory alone cannot account for countries' choices of policy instruments.

Other variables besides cultural dynamics are likely to influence national behaviour. For example, while Japan's response to the climate change issue was consistent with cultural theory's projections for speed of implementation, not all hierarchies move quickly. Top-down decision-making styles do not always engender swift action. Some hierarchies, such as the former Soviet Union, are

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large, inefficient, and impoverished; implementation of government-directed policies is usually slow. This again suggests that cultural theory by itself is not adequate to explain national behaviours.

Another weakness of the application of cultural theory is that the theory often lends itself to different interpretations. For example, Sweden imposed a carbon tax which contained breaks for some industries. But cultural theory tells us that an egalitarian society places high value on uniform application of rules and regulations. One could therefore argue that Sweden's unequal taxation policy favours certain (powerful) groups, pointing to strong hierarchical elements within the society. On the other hand, one could also argue that such tax breaks represent the natural tendency of an egalitarian-dominant culture to level the playing field. There are many instances where events can be explained in such a way that they suit – or do not suit – the tenets of cultural theory, depending on the analyst's point of view.

In addition, it is often difficult to quantify such abstractions as 'strife' and 'consensus.' That is, since virtually no decision can be made without some dissent from some source, and since consent is often grudging, it can be difficult to determine at what point a country ceases to exhibit the characteristics of a consensus-seeking egalitarian culture and takes on the characteristics of the more aggressive market culture. The subjective nature of this determination can greatly complicate the task of assigning cultural categories.

There are several reasons why cultural theory may not satisfactorily explain what happened in each of the three countries discussed in this paper. One reason is that, like all models, cultural theory represents an oversimplification of highly complex systems. No country will fit into an exact mould of a given cultural type: all nations exhibit elements of the other cultures. The theory only suggests that there is a tendency of a given nation to belong to one of the three major cultural types. While cultural theory enables us to explain differences in how countries make and implement policies, it cannot, as a model, explain all the multiple interactions which may lead to outcomes different than those projected. When a model cannot be captured mathematically, i.e., if it involves qualitative rather than quantitative data, such limitations appear significant.

V. CONCLUSION

In the early years of the climate change debate, Sweden appeared to be by far the most proactive of the three countries described here in developing climate change policies. Part of the reason of this is the long-term orientation of the egalitarian-dominant state and the premium placed on reaching social consensus. The US, a market culture, was the weakest of the three cultural types in arriving at substantive policy measures. However, the purpose of this paper is not to evaluate the relative merits of the various approaches described here; such an

assessment lies more in the realm of comparative political economies studies. Our objective is rather to demonstrate the extent to which cultural theory can project differences in national decision-making styles. While the theory cannot adequately explain all aspects of a country's behaviour, there were enough consistencies to enable us to conclude that a majority of its projections held. The theory was strongest in projecting the nature of the policy processes and weakest in projecting choices of policy instruments, since each country employed a combination of various types of instruments, most notably fiscal incentives and research and development. Most important, cultural theory enabled us to see that, in dealing with matters of international concern, every country approaches the negotiating table with different ideas of what are realistic and desirable outcomes. Such differences in outlook can be ascribed in large part to differences in institutional cultures, which influence how a country will frame an issue, who will play the most significant role in shaping the debate, what the policy making process will be like, and which instruments will be chosen to achieve the desired result.

While it does not fully describe any one country, cultural theory nonetheless can help account for some of the differences in national attitudes toward problems of international concern. Thus, the theory could be used in the future to project how a given country may respond to a pressing global issue. It may further assist individuals charged with formulating international agreements in designing regimes that are of optimum effectiveness, since it would force countries to give thought to selecting policy measures *before* and *during* treaty formulation, instead of afterwards. Indeed, some treaties are ineffective because, even though negotiators commit to things internationally, they are unable to implement them once back home. An agreement such as this would take domestic factors into considerations early enough to minimise potential internal obstacles. This paper reminds us that the influence of culture and social values cannot be neglected, and while cultural theory by itself cannot fully describe any country, it can be used as one tool in a varied arsenal for explaining differing domestic responses and designing useful agreements.

NOTES

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¹A word of caution is appropriate with respect to terminology. These terms as applied here are convenient labels for the four cultural types; the words do not necessarily carry all of the connotations that accompany them in other branches of the social sciences.

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