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## ***Institutional Matrices Theory, or X- and Y-Theory: A Response to F. Gregory Hayden***

***Svetlana Kirdina-Chandler***

**Abstract:** This article draws attention to issues about the institutional matrices theory (IMT) as perceived by and raised in the article by F. Gregory Hayden. To clarify the “controversial” points, I structure my response narrative along two lines. First, I present the prehistory of IMT, or X- and Y- theory, including earlier work by scientists related to the concept of institutional matrix. I connect the development of the actual IMT with the period of “perestroika” and the associated market experiments and reforms in Russia and Eastern European countries. One could see that the effects of market reforms in Russia were different in comparison with other countries in economic transition. I show that the institutional approach was accepted as more relevant to understanding the unexpected results in Russian society. I present IMT as a development of the ideas of Karl Polanyi and Douglas North to answer the challenges of explaining the real social and economic processes in Russia, as well as its wider application to a broader range of economic and social situations in different countries. Second, I then present the main IMT theses, giving special attention to the issues as perceived and raised by Hayden. In conclusion, I suggest the possibility of a joint project that combines IMT consideration and the social fabric matrix (SFM) concept of F. Gregory Hayden.

**Keywords:** institutional matrices theory, Karl Polanyi, Russia

**JEL Classification Codes:** B40, B52, O57, P16, P50

*It is not in your power to foresee  
The response to words written by you  
– Fyodor Tyutchev ([1869] 1986, 156)*

These lines from the poem of the great Russian poet Fyodor Tyutchev, in my opinion, speak about why dialogue and communication are so necessary in science and generally. We often cannot foresee how our ideas, words, and statements will be understood, perceived, and interpreted. This is especially true for international

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discourse. Therefore, I am very grateful to the editor of the *Journal of Economic Issues* for the invitation to answer F. Gregory Hayden's views and questions posed in his article about the institutional matrices theory (IMT).

Any scientist appreciates attention to and interest in his/her work, and critical observations are particularly interesting. They often help not only to promote research, but also to provide additional explanations for the scientific results presented. In answer to Hayden, I would like to first share with him (and other readers) the story of how the IMT originated and developed. Perhaps this will help to clarify the issues that Hayden poses. After all, ancient thinkers who lived long before us said: "If you want to understand logic, follow the history."

### ***IMT: Prehistory***

During Soviet times, when I was studying for five years at the Novosibirsk University (Western Siberia), in the Faculty of Economic Cybernetics, the main economic disciplines that we studied were the Marxian political economy of capitalism and the political economy of socialism. All other economic doctrines – from neo-classical economics to institutionalism – were generally considered "bourgeois," and we only met them on a facultative basis. For my final university courses, I chose sociology as a specialization. In the Soviet Union, sociology did not then exist as a separate discipline, but was studied in the economic and philosophy faculties. Therefore, as a result, my diploma project reflected a sociological view of economic processes. This was a good foundation for further study and consideration of institutionalism. The collapse of the USSR in the late 1980s was the collapse of Marxism as an ideological doctrine, and of the political economy of socialism as the main economic theory. Comprehension of the processes taking place required a new methodology from theoretical economic scientists.

The main processes in the 1990s were privatization and the development of market relations to replace a planned economy. In the period from 1992 to 1996, in the city of Novosibirsk (the largest city in Siberia with a population of more than one million people), a market experiment in housing was carried out pursuant to the Agreement on Technical Assistance between the Russian Federation and the United States. The objectives of the experiment were to convert the state housing economy to a market system. This project was conducted with the financial support of the USAID program. The market experiment was supported by the city authorities and conducted by consultants from the United States, who came to Novosibirsk. I was one of the local experts invited by USAID to be involved in the monitoring of this project. Participants in the experiment, including the local experts, were trained in the methods of how private companies worked in this area of activity, in connection with which we visited the U.S. to become acquainted with U.S. methods. The results of this market experiment in the housing economy of Russia were described in a work I co-authored with Olga Bessonova and Ruth O'Sullivan (1996).

What were the results of this experiment? Instead of the expected full marketization of the state property system, we saw, first, a metamorphosis of the

private firms, which had been introduced as part of the market experiment, to Russian conditions and, second, just modernization rather than complete replacement of the institution of state property (Bessonova, Kirdina and Ruth O'Sullivan 1996, 135-147). We could also see similar processes when we later tried to conceptualize the wider social experiment of “perestroika” in Russia as a whole. This phenomenon could not be explained by neoclassical theory, which had then begun to be actively studied in Russian universities. However, the institutional approach turned out to be very relevant and useful. It helped us to understand why – despite the political will of the Russian leaders of those years and the broad support of many of our friends from developed countries – Russia was not able to create the same market economies as developed Western countries had.<sup>1</sup> The most appropriate method for analysis and understanding of the processes taking place in Russia was based on the concept of institutional matrices with their lock-in effect and the idea of path-dependence.<sup>2</sup>

### ***IMT: Main Theses***

The idea of institutional matrices was proposed by Karl Polanyi and Douglas North. According to them, the system of institutions of each society forms a sort of “institutional matrix” that determines the range of possible trajectories for development of basic property rights and political institutions (North 1981, 1989, 1990; Polanyi 1944). Polanyi and North suggested that each society has its own institutional matrix, but they did not develop the idea. Both authors used the term *matrix* in its original meaning, which was derived from the Latin language,<sup>3</sup> and not from its later mathematical interpretation and application. Our studies of Russian and world history have made it possible to clarify and develop the concept of institutional matrices (Kirdina 2014b). What direction has this development taken?

First, it became evident that not only economic and political institutions, but also the dominant ideological patterns (ideological institutions) are closely

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<sup>1</sup> It was not only the Russian situation. It was the well-known Peruvian economist, Hernando de Soto (2000), who raised the question “why capitalism triumphs in the West and fails everywhere else.” He shares the facts from the long history of Latin American countries about many attempts to implement private property land reforms in the countryside and private property housing reforms in urban areas. De Soto analyzes a wide range of special programs supported by the World Bank and other international organizations, as well as internal reforms to develop a private property system in these countries. He concludes that all of them failed.

<sup>2</sup> Path-dependency is a broad concept expressing the statement that “history matters.” It means that “where we go next depends not only on where we are now, but also upon where we have been” (Liebowitz and Margolis 2000, 981). We are able to correct a historically chosen path and institutions, but we are unable to dramatically change them. As Joël Bellaïche (2010, 178) puts it, “the phenomenon of dependence on history might be ignored for short periods of time (10 years, 20 years) but is not negligible for secular comparisons.” “The economies of scope, complementarities, and network externalities of an institutional matrix make institutional changes overwhelmingly incremental and path dependent” (North 1993).

<sup>3</sup> A matrix is an environment or structure in which something originates or develops. Matrix, related to the Latin word for “mother,” originally meant “pregnant animal” or “breeding female,” and was later generalized to mean “womb.”

interrelated. This connection has a stable character. Thus, in 2000, the idea of visualizing the institutional matrix in the form of an equilateral triangle (which Hayden commented on negatively in his article) was born. The triangle allows us to visualize the main aspects of IMT: In each society, institutions of economy, politics, and ideology are equal and connected in a particular way to form a “rigid” figure.

Second, our research has shown that, at a certain level of abstraction, the diversity of particular institutional matrices of all countries (as Polanyi and North wrote) can be aggregated into two ideal types, also known as pure types (in the Max Weber sense). These matrices were named X- and Y-matrices.<sup>4</sup> Therefore, people call IMT the X- and Y-theory. Sets of basic economic, political and ideological institutions forming each matrix were identified (see Appendices). As it turned out, to perform the same social functions – that actually “make society a society” – different sets of basic institutions (X or Y)<sup>5</sup> are formed under different conditions. Accordingly, they generate different types of economies, political systems, and ideological orders.

The singling out of two types of social structures is not something new either in the social sciences or in economics. For example, two types of economies have been written about for more than a century. In 1853, Karl Marx (Germany) wrote about two paths of economic development: the European one (see “Das Kapital”) and the “Asiatic mode of production without private ownership of land.” In 1939, Walter Eucken ([1939] 1996) from Germany presented a theory about “exchange economies” and “centrally planned economies.” Later Hungarian anthropologist Karl Polanyi (1957) wrote about exchange and redistribution economies. In 1993, Russian scholar Olga Bessonova (1993) presented her concepts about market and *razdatok* (non-market) economies. In 2002, Steven Rosefielde (USA) first published his book about market *self-regulating* category A economies and *culture-regulated* category B economies (Rosefielde 2008). His book was published twice (in 2005 and 2008), as well as translated into Russian (in 2004) and Chinese (in 2007).

I will say more about the approach of Karl Polanyi in answer to Hayden’s comments about why reference to Polanyi’s idea of reciprocity was excluded from IMT consideration. As is known, in his analysis Polanyi distinguished three main types of economic integration: namely, redistribution, exchange, and reciprocity. (Some authors stress that the household was also considered by him as a fourth one; for example, see Kasai 2017.) Analyzing reciprocity, which manifests itself on a national or local scale, Polanyi (1957, 1977, 36) did not see it as the basis for forming a particular economic type of society, whereas he used redistribution and exchange to classify national economies. The results of Polanyi’s anthropological research of societies, based predominantly on exchange or redistributive economies, were

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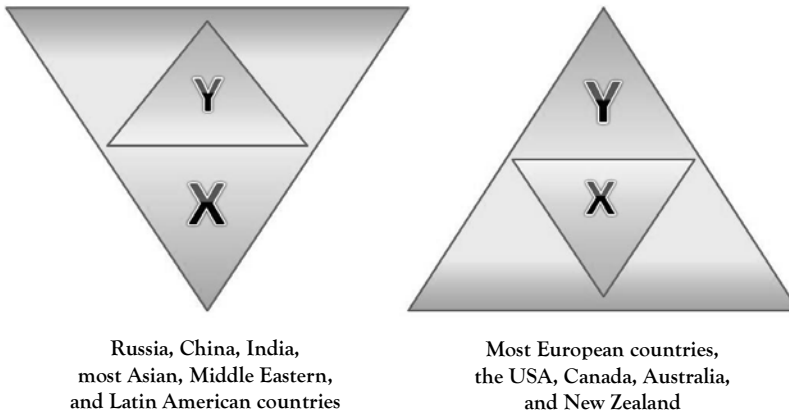
<sup>4</sup> The letter designation is neutral. It was chosen because it allows positive or negative connotations to be avoided, which often arise when using semantic definitions.

<sup>5</sup> We distinguish basic institutions from so-called institutional forms – that is, specific rules and structures in which basic institutions express themselves. If the latter retain their content, then the institutional forms are mobile, constantly changing, and evolving over time. For example, the exchange institution can manifest itself in various forms – from trading in medieval markets to trading on the modern stock exchange.

presented in a book published posthumously (Polanyi 1977). Thus, we followed Polanyi's approach by dividing economic institutional structures into two main types.

Third, the core of IMT, or X- and Y- theory, is as follows. During the historical development of nation-states, as a rule, the earlier or originally defining matrix of institutions continues to dominate. Institutions of the other matrix are presented as a necessary addition, but they are complementary. This fundamental position is represented graphically in Figure 1. In it, we also present our hypothesis about the countries where the X-matrix dominates and countries where the Y-matrix dominates.

**Figure 1. Combinations of Predominant and Complementary Institutional Matrices**



This figure is reproduced in all our texts about IMT, including an article published in the *Journal of Economic Issues* (Kirdina 2014a). The fact that Hayden does not make reference to it in his article means, I assume, that he is not fully familiar with the complete description of IMT. Let me repeat again: All economic, political, and ideological X- and Y-institutions coexist in different combinations. “Thus, though we are outlining the general features of X- and Y-matrix institutions, in real-life situations the extreme cases are never fully demonstrated. The most efficient and effective functioning of X- and Y-matrices in each society requires an appropriate institutional balance with all morphologically interconnected institutions” (Kirdina 2014a, 314).

The idea of historical domination of one matrix in an institutional structure is one of the assertions of IMT that is frequently criticized. So far, we have not been able to find examples of societies where the dominant matrix of the basic institutions has been replaced by another one. For example, we have analyzed the internal revolutions (we are not talking about revolutions introduced from outside), such as the Japanese Meiji Revolution of 1868 (or Reform or Renewal), the French Revolution of 1789, or the 1917 Socialist Revolution in Russia (Kirdina 2014a, 316-317). As a rule, in the course of revolutions, a return to the evolutionary path of development determined

by the preexisting dominant institutional matrix took place, although the introduction of new institutional forms occurred. Additionally, a number of other investigators also paid attention to the fact that during a revolution regeneration of the institutions that were historically established in a country takes place (de Tocqueville, [1856] 1998, 23; Eucken [1939] 1996, 82-83; Webb, 1968). Thus, the statement about the preservation of the dominant position of one type of matrix during the history of a state has not yet been refuted.

### ***IMT: Effect and Cause***

IMT allows us to present the institutional structure of different countries as a *unique* combination of two matrices. The uniqueness expresses the proportion of alternative, but complementary X- and Y-economic, political, and ideological institutions for each country in specified periods. The picture above reflects just the general idea that one matrix dominates and the other is complementary. The real ratio of both types of institutions is always different. Providing the appropriate institutional balance at any time is an actual practical task for politicians and a creatively applied task for institutionalists. This is, in my opinion, the most interesting area for further research.

In real life, we can find many examples of a dynamic institutional balance, which means a changeable ratio of dominant and complementary institutions. We can find an increasing role of complementary institutions in periods when traditionally dominant institutions are unable to deal with particular circumstances. For example, the New Deal instituted by President Roosevelt in 1933 was, in fact, a series of programs introducing complementary X-institutions into a predominantly Y-economy in order to overcome the consequences of the Great Depression. In Russian history, we can find symmetric examples. It was during the period from 1921 to 1928, that Vladimir Lenin introduced the New Economic Policy (NEP) which meant incorporating the development of market Y-institutions into an X-economy after the era of “war communism.” In both cases, these programs – having reached their reconstruction goals – were subsequently phased out. In the language of IMT, the institutions of the traditionally dominant matrix (Y for the US and X for Russia) reinforced their positions again.

Good support for the thesis that X- and Y-institutions are interconnected and work together in institutional structures is presented in Hayden’s article. This is very evident in the section of the article, titled “Redistribution Is Not Limited to Being Organized by Supreme National Centers.” So, despite the US being one of the countries with the most developed and effective market institutions, many redistributive X-institutions are also present, such as the national Social Security system, which Hayden mentions.

At the end of my response to Hayden’s article, I would like to draw the readers’ attention to a most interesting and intriguing question: Why in each country is this or that particular type of matrix historically dominant? Is it the result of a divine principle or human intention? Or is it the result of the natural evolution of human societies? Our latest research allows us to assume that predominant institutional

matrices are the historical answers to geographic challenges (the article about the research was first presented in English at the 2017 AFIT conference in San-Francisco, US). We have carried out research based on the *mixed method* of combining qualitative and quantitative analysis to investigate the role of geographical environments on institutional development in different countries. In countries with relatively soft climate characteristics (optimal air temperatures and precipitation), as well as lower natural risks, the results have shown that the Y-matrix institutions historically prevail. In countries with more extreme climate conditions, with levels of precipitation that are relatively high or low, and with natural risks being quite high, the results have proven that X-matrix institutions historically dominate. Both of these conclusions have been logically justified and statistically confirmed.

In presenting the main theses of IMT in this article, I have simultaneously tried to respond to the questions and points Hayden raises. However, I cannot answer his questions relating to statements and views he imputes to me which I have never made and do not share, or interpretations of my texts by other authors and commentators. That is why I have chosen the words of our Russian poet for an epigraph to my article to reflect just such situations.

The best way to remove misunderstanding, in my opinion, is an open discussion and joint work. The analysis of the U.S. economy's direction, as indicated in Hayden's article, coincides with our research tasks of studying the interaction of dominant and complementary institutions in different countries. Until now, my contacts with F. Gregory Hayden have been sporadic – they have been meetings at AFIT and AFEE conferences, in which I began to participate in 2012. It was during these conferences that I first became acquainted with his SFM concept, which represents a different (in comparison with IMT) implementation of the institutional approach in socio-economic analysis. I think it would be interesting to organize a joint project, where he and I (along with colleagues) could use each other's findings to build on the existing knowledge.

### ***Conclusion***

The main thrust of Hayden's article, which evaluates the institutional matrices theory (IMT), is to provide an illustration of the deep differences between the Russian and Western political economies. In my opinion, this intention would be entirely applicable to the times of the Soviet Union. During that period, there really was a scientific distinction in economic doctrines that was part of much wider differences between two social and economic systems. But in the modern global world, an active exchange of scientific ideas takes place, and since the 1990s Russia has energetically participated in this process.

The 1990s (and the first decades of transition), were an active period of "transplanting" foreign institutional thinking into Russian economic and social thought (Frolov 2007). Numerous writings of Western authors were translated and published. It provided platforms for Russian scholars to offer their professional judgments, as well as to absorb ideas coming in from Western economists, including the evolutionary-institutional approach (Kirdina 2017).



The institutional matrices theory (IMT), or X- and Y-theory, developed in Russia since 1999, projects the ideas of many Western and Russian scholars. The main predecessors make a *Top 12 List* for IMT, including: the French philosopher and social theorist August Comte; the German philosopher, sociologist, and economist Karl Marx; the French sociologist Emile Durkheim; the Hungarian intellectual (forced to flee to Austria, then to US and Canada) Karl Polanyi; the group of scientists of the “state school of Russian historiography” (among which, A.D. Gradovskiy, I.I. Dityatin, P.N. Milyukov, V.I. Sergeevich, and others); the Russian-American sociologist Pitirim Sorokin; the American sociologist Talcott Parsons; the American economist Douglass North; the Ukrainian-born American economist Harvey Leibenstein; the Russian culturologist Alexander Akhiezer; and two other Russian sociologists Tatiana Zaslavskaya and Olga Bessonova.

IMT emerged in an attempt to answer the call of Thorstein Veblen – a founder of original institutional economics – about the necessity of “theories of a comprehensive process by the notion of a cumulative causation” (Veblen 1898, 377-378). The idea of basic institutions in X- and Y-theory develops his approach about social institutions that are “not only the result of selection and adaptation processes, shaping the prevailing and dominant types of relationships and spiritual position, [but] ... they are [also] special modes of the existence of a society, forming a special system of social relations and, hence, in turn, are an effective selective factor” (Veblen 1899, 188). I suggest that the consideration of “special modes of the existence of a society” through the prism of unique combinations of X- and Y-institutions enables the understanding of how societies really work.

IMT shows that “societies with dominance of different matrices co-exist and complement each other, having ‘pluses’ and ‘minuses’ of their own ... Redistribution economies of X-matrix nations are known for low motivation of producers, but at the same time for cheapness of goods and simplicity of technological solutions. The market economies of Y-matrix countries, on the other hand, are noted for high motivation of producers but also for historically persistent expensiveness of goods and services. Nations with different types of matrices are constantly exchanging required institutional patterns that help them develop their cultural, economic and institutional setting” (Kirdina 2014a, 315). The exchange of ideas between F. Gregory Hayden and I (as well as my colleagues) is part of this permanent process.

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**Appendices**

**Table 1A. Institutions of X- and Y-Matrices in the Economy and Their Functions**

<b>Functions of economic institutions</b>	<b>Basic institutions of X-economy</b>	<b>Basic institutions of Y-economy</b>
Transfer of goods	Redistribution (accumulation - coordination-distribution)	Exchange (buying-selling)
Regulating access to goods (property rights system)	Supreme conditional ownership	Private ownership
Interaction between economic agents	Cooperation	Competition
Labour system	Employed (unlimited term) labour	Contract- (short and medium term) labour
Feedback loops (effectiveness indexes)	Cost limitation (X-efficiency)	Profit maximization (Y-efficiency)

**Table 2A. Institutions of X- and Y-Matrices in Politics and Their Functions**

<b>Functions of political institutions</b>	<b>Basic institutions of X-political system</b>	<b>Basic institutions of Y-political system</b>
Territorial organization of the state	Administrative-territorial division (or unitarity)	Federative-territorial structure (or federation)
Governance system (decision-making flows)	Vertical hierarchical authority with centre on the top	Self-governance and subsidiarity
Access to governing positions	Appointment	Election
Type of interaction in the order of decision making	General assembly with the rule of unanimity	Multi-party system with the rule of a democratic majority
Feedback loops	Appeals to higher levels of hierarchical authority	Legal suits

**Table 3A. Institutions of X- and Y-Matrices in Ideology and Their Functions**

<b>Functions of institutions</b>	<b>Basic institutions of X-ideology</b>	<b>Basic institutions of Y-ideology</b>
Core principle of social actions	Collectivism	Individualism
Normative understanding of social structure	Egalitarian	Stratification
Prevailing social values	Order	Freedom
Labour attitudes	Wellbeing-oriented	Pecuniary-oriented
Principles of common thinking	Integralism (holism, continuity)	Specialism (reductionism, discreteness)