

## Original Paper

# Integrity in Self-Organizing Societies: The Case of Libor

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### **Abstract**

*From a cross-disciplinary social science perspective, it is evident that financial and economic development is not a matter simply of a proper social structure (e.g., Laissez-faire free-market) but also requires good individual leadership (competence and honesty). Financial systems require both structure and leadership, despite some economic scholars holding to the idea of an economic structural mechanism of a 'perfect market'. However, good leadership and proper societal structure together is not a simple process, nor certainly obtained, as empirically there are no societal 'mechanisms'. A case, such as Libor, clearly illustrated the importance of both structure and leadership in the proper operation of societal systems. Bad leadership can corrupt a societal structure; and a corrupt societal structure can enable bad leadership. The case of Libor provides empirical evidence for the social science proposition that a financial system requires both proper government regulation and integrity in private sector operations. But this is not easily achieved in societies of self-organizing systems. We apply a cross-disciplinary framework of systems dynamics to analyze the Libor event, as a kind of challenge in the control of self-organizing societies, which are facilitated by information technology processes.*

### **Keywords**

*social-technical systems, finance, technology, corruption*

### **1. Introduction**

The idea of 'self-organizing societal systems' is a fundamental concept to both political science theory (e.g. democracy) and to economic theory (e.g. price-equilibrium markets). Both government and industry operate as self-organizing systems. A self-organizing societal system is one in which control lies in local organization and not in a central authority. In a capitalistic democracy, while a government provides a central authority, it does not provide direct control over either the political or economic systems. Self-organization in a political system means that control ultimately is local, in the form of elections. In a self-organizing economic system, control is local as competition between businesses for shares of a market. Traditional economic theory has not addressed the problem of what happens to control in an economy when local control fails (such as in cases of a financial market collapse, as

happened in 2007-2008). In the history of Libor, there was a failure of local control in the self-organization of the banking system. It is a case where competitive banks colluded in distorting the performance of the financial system – through financial fraud.

Corruption by individuals of institutionalized systems in society is one of the great modern societal problems. We can recall that after Max Weber introduced the sociological concept of ‘bureaucracy’, an idea of ‘rationality’ was a central institutional process of a bureaucracy (Weber, 1947). This idea of ‘rationality’ included a separation of the office in terms of ownership — public versus private good. The public property and authority of the office should be separated in a modern bureaucratized office from the private property of the office holder. For example, in the United States government, there are Federal laws that forbid office holders from accepting gifts that would create conflict-of-interest in exercising the responsibilities of the office.

In Weber’s writing, ‘rationality’ also included an ‘orderly’ cognitive process in operations. Decision criteria by which decisions are made in a modern bureaucratized office should be explicitly written down and the procedures by which activities are conducted should be formalized. This explicitness of decisions and formalization of procedures introduced a kind of formal cognitive order, ‘rationality’, into the operations of a bureaucracy. Moreover, this rationality should be governed by the goal of attaining efficiency and effectiveness in operations. Influenced by Weber’s studies, this idea of rules and rationality in large organizations was called by the name of “bureaucracy”.

Later sociologists, notably Robert Merton, began to study the idea not of efficiency of organizations, but of inefficiencies in large organizations (Merton, 1967). They gave the idea of ‘bureaucracy’ a bad name, pointing out that formal procedures are also rigid and inflexible. One is always tempted to ask: who was right? Was Weber or Merton right? Are bureaucracies inherently rational or irrational? The answer is that, probably, both were right. Formalization of decision-making and procedures in a large organization does provide rationality and efficiency in operating repetitive activities; but at the same time formalization creates rigidity and inflexibility in policy and decision-making.

Yet there is another way foil the ‘good’ intention of bureaucratic ‘institutionalization’; and this is ‘corruption’ by bureaucratic officials. The corruption challenge to bureaucratic-type organization never became as big an issue in American sociology, as did the challenge of ‘rationality’. Nor did corruption become a big issue in the economics discipline, since the Neo-classical synthesis school of economics assumed that all economic markets were perfect and therefore incorruptible. Neither the social science concepts of ‘organizational rationality’ nor of ‘economic perfection’ prevented the empirical reality of corruption. Corruption only became a big issue in the social science discipline of political science. We argue that the societal phenomena of ‘corruption’ is a cross-disciplinary challenge — involving sociology, economics, political science, psychology, management science, etc.

For this, one should analyze an empirical case, such as Libor in a cross-disciplinary perspective. We use the cross-disciplinary analysis of societal systems theory. This analysis empirically highlights the need to supplement economic with theory from other social science disciplines in order to fully

understand a societal event and to address problems in such events. Cross-disciplinary analysis of the Libor case will particularly emphasize the sociological concept of ‘institutionalization’ as important to economic self-organizing systems. It will also emphasize the importance of the management science concept of ‘control’ to economic self-organizing systems within regulatory theory. Stand-alone social science disciplines need the addition of cross-disciplinary research and analyses in order to construct empirically accurate explanation of historical events in society.

## **2. Method — Historical Cases and Cross-Disciplinary Analysis**

The method in this paper is to use (1) case studies drawing from the historical record, (2) upon which to base social science hypotheses about ‘middle range’ societal theory, (3) developed from a cross-disciplinary analysis of historical events.

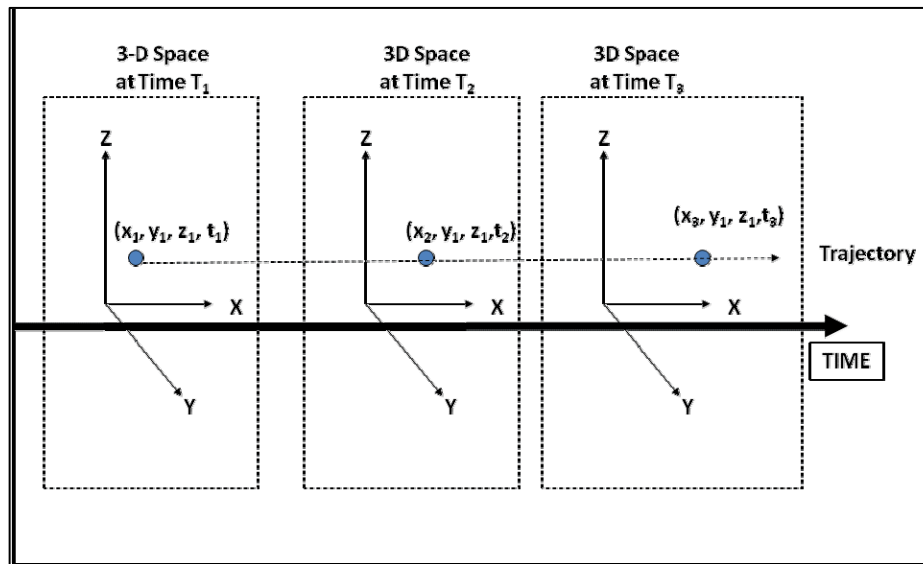
To view the social sciences as a whole (as a kind of ‘societal science’), one needs a cross-disciplinary method to use and integrate concepts from of all the social science disciplines. And one needs to base such cross-disciplinary studies upon historical events. For the social sciences, history is the equivalent of an ‘experiment’ to the physical-biological sciences. One cannot ‘experiment’ upon society, as such experiments would be unethical and subjective. But societies ‘experiment’ upon themselves, through historical events which alter social structures and processes. Such events are kinds of ‘natural experiments’ in societal science.

The historians’ methods, historiography, emphasize the use of ‘source material’ from the time of an historical event (see for example (Burke, 2005)). We use this historical methodology of ‘source materials’ in the form of newspaper coverages of the Libor event. Accordingly, we will quote extensively in this paper from many of the newspaper accounts of the Libor event. This is to provide the reader with pertinent ‘historical sources’ of empirical information about Libor — treating the Libor event as a kind of ‘natural experiment’ in the financial regulation of a self-organizing society.

In the discipline of the sociology, it has long been an American tradition that sociologists should seek ‘middle-range’ theory rather than ‘grand’ theory. This was particularly as espoused by Robert K. Merton (Merton, 1967) (Merton, 1968). Merton argued for this in order to establish sociological theory directly based upon empirical research. We aim here at ‘middle-range societal theory’ for constructing theory about ‘regulation’ and ‘institutionalization’ in the operation of self-organizing financial markets. This is the reason economic historians have studied the many empirical failures of financial regulation in modern history. And such failures have been frequent, such as the Global Financial Crisis 2007-08, Euro-Crisis of 1011, and Libor scandal of 2011.) Merton himself even put sociological analysis into the realm of the economics of financial systems, (Merton and Bodie, 2005).

However, the challenge to ‘middle-range’ theory is to integrate such into ‘grand theory’, comprehensive theories about a whole society. And for integration, methodologically, one needs a common perceptual space in which to view a society. Societal dynamics theory provides such an integrative perspective for viewing the totality of societal structures and processes. (Betz, 2011) We

briefly review the basis of societal perceptual space. For this, we can first recall that the perceptual space of ‘physical space-time’ is fundamental to the physical and biological sciences. This is the well-known framework of three spatial dimensions and one temporal dimension, as sketched in (Figure 1).



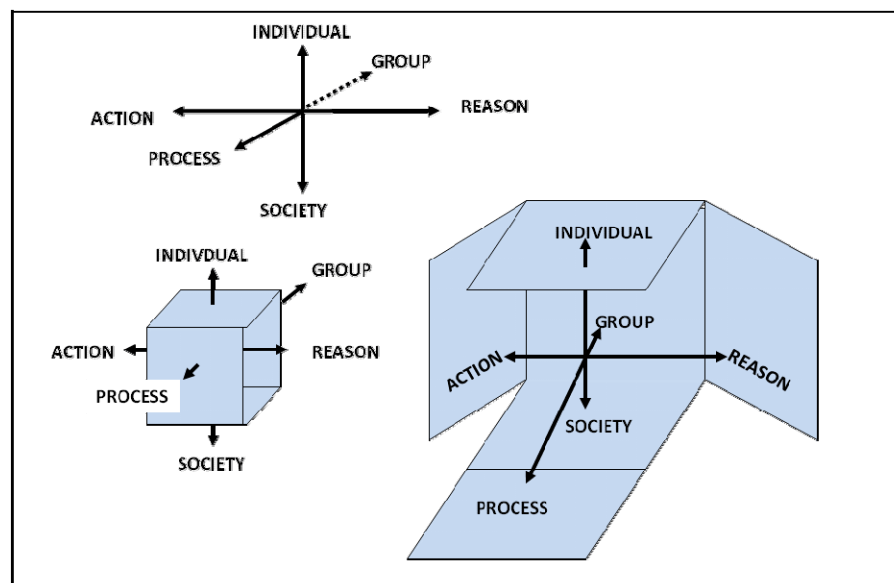
**Figure 1. Classical Four-Dimensional Space-Time Description of Motion of Material Object**

All physical things (matter) in a material universe are individuated from each other in a spatial and temporal framework. Two physical objects in material nature are said to be different because they can exist at different points of space at the same time. Any object phenomenally observed in a given space can be mathematically described as to its position by a set of spatial coordinate numbers  $(x,y,z)$  upon a reference frame  $(X,Y,Z)$  of the space. Description of position is the first step in any mechanistic representation of physical things in nature. Methodologically, this physical perceptual space enables all the physics disciplines and chemistry disciplines and biology disciplines to communicate with one another. Chemistry uses physical atomic theory to explain molecular bonding and biology uses physics and chemistry to explain the molecular models, such as DNA. Thus the importance of a common perceptual space in science is to enable cross-disciplinary communication — observing nature in the same perceptual framework.

In historical studies of society (such as economic history), one does not observe ‘physical objects’ but instead as society, or ‘societal objects’. Thus physical concepts (i.e., ‘physical objects’, ‘space and time’, ‘motion’, forces’, ‘causality’) are not useful (not methodologically appropriate) to accurately describe societal history. Accordingly, there never is any ‘causality’ in historical explanation. But there are other kinds of explanations in history. What are they? To find them, one constructs a methodological analogy to a ‘physical observational space’ — a ‘societal observational space’. This has been constructed from the three basic dichotomies in the social sciences: *individual-society*,

*groups-processes, and reason-action. (Betz, 2011)*

The first basic idea in the sociological literature is the distinction between individuals and the society in which the individuals live — the dichotomy of *individual & society*. A second basic idea in sociology distinguishes how individuals associate into groups within a society, and the processes a group inculcates in members — the dichotomy of *group & process*. In sociology, groups, masses, organizations are basic units in which individuals in collect together for action. A social process is a series of actions coordinated to produce an outcome planned by a group. The third basic idea found in the sociological literature (and in the management science literature) is of the thinking by individuals and their behavior. Individuals described as sentient (or cognitive) beings acting according to perceived reasons — the dichotomy of *action & reason*. These three basic social science dichotomies can be graphed upon a three-dimensional societal space, as shown in (Figure 2).



**Figure 2. Societal Perceptual-Space Event-Box**

**Interactions of an Individual & Society Are Mediated Through Reason & Action and Through Groups & Processes**

In any historical event describing an epoch of a society, the event can be described as factors and interactions of the three dichotomies of “individuals-societies and action-rationality and groups-processes”. To conveniently inscribe the description of an event in the perceptual space, one can show the areas around the dimensional axes as a kind of event box. (We later show how this perceptual space provides a systematic list of explanatory relations appropriate to explaining a historical event in a society.)

### 3. History — Libor Event

We apply this analysis to the Libor event. The Libor index began as a convention among banks in London, to set a daily average interest rate for loans between banks. Landon Thomas Jr. wrote: “Libor (short for the London Interbank Offered Rate) is the interest rate that affects trillions of dollars’ worth of corporate and consumer loans each year. It is supposed to be a neutral figure that reflects how much it costs a bank to borrow money... In the early days of Libor, starting in the late 1960s and into the 1980s, the fact that the rate banks used to borrow money was set and governed by a small group of like-minded bankers based in London was not seen as a problem. In fact, according to Minos A. Zombanakis, a former banker at Manufacturers Hanover who says he made the very first loan based on Libor by inventing the product on the fly, it was a sense of responsibility and trust between banks that underpinned the rate’s success. Mr. Zombanakis, who is 85 years old and retired in his home country of Greece, recalls that first Libor loan — \$80 million extended by a group of banks to Iran, as if it were yesterday. ‘We had to fix a rate, so I called up all the banks and asked them to send to me by 11 a.m. their cost of money,’ he said. ‘We got the rates, I made an average of them all, and I named it the London interbank offer rate.’ For more than 15 years, the banks set the rate more or less as Mr. Zombanakis described — by throwing out the highest and lowest rates and compiling an average of the remaining ones. Then, in 1986, the British Bankers’ Association was asked by its member banks to assist in the setting of the benchmark rate. It has overseen the process ever since, even as the club of gentlemen bankers making syndicated loans in the City of London evolved into the opaque and impersonal multitrillion-dollar interbank market.” (Thomas, 2012)

Thus in the beginning, it was bankers’ sense of responsibility and trust (integrity) which was essential to the accuracy of Libor — at first but not later. After 1986, the British Bankers’ Association supposedly oversaw the procedures for setting the rate. But their oversight failed, and at some point, the rate became rigged. Peter Eavis wrote: “Eighteen banks currently supply data for setting dollar-denominated Libor. According to regulators, Barclays traders sought to skew Libor to benefit their bets. These trades were executed using financial contracts called ‘derivatives’ that were linked to Libor.” (Eavis, 2012)

The Libor rate was important not only to British banking but also to European and American financial systems. Gary Gensler wrote: “Americans who save for the future, use credit cards or borrow money for tuition, cars and homes deserve assurance that the interest rates on their savings and loans are set in a reliable and honest way. That’s why the revelation that the British bank Barclays attempted to manipulate the London interbank offered rate, or Libor — one of the benchmark rates used to determine the cost of borrowing around the world — is so disturbing. But the Barclays case isn’t only about misconduct by large financial institutions. It also raises questions about the reliability and accuracy of these key interest rates, which are largely determined by the private sector, without significant government oversight. When you save money in a money market fund or short-term bond fund, or take out a mortgage or a small-business loan, the rate you receive or pay is often based,

directly or indirectly, on Libor. It's the reference rate for nearly half of adjustable-rate mortgages in the United States; for about 70 percent of the American futures market; and for a majority of the American swaps market, where businesses hedge risks from changes in interest rates." (Gensler, 2012)

Then Gary Gensler was head of a U.S. regulatory agency assigned, after 2009, with new responsibility — to regulate financial derivatives markets in the U.S. As part of his responsibility, he looked into the Libor index. Gensler wrote: "These changes in the markets raise questions about the integrity of this important benchmark. First, why is Libor so different from another benchmark interest rate for borrowing in United States dollars — Euribor, or euro interbank offered rate? Both rates are calculated on the basis of banks' answers to roughly the same question. For Libor, a bank is asked at what rate it thinks it can borrow, while for Euribor, a bank is asked at what rate it thinks other banks are able to borrow. And yet the Euribor for dollar borrowings is about twice as high as the comparable Libor. Second, why have Libor and other benchmark rates typically not been aligned, since 2008, with the borrowing rates that would be implied by foreign exchange markets? A long-established financial theory known as interest rate parity says that the difference in interest rates between two countries should be roughly in line with the expected change in exchange rates between the countries' currencies. (If it isn't, that opens an opportunity for arbitrage, the practice of taking advantage of price differences.) Until 2007, as the theory predicted, the difference between the borrowing rate in one currency and the lending rate in another could typically be derived from foreign currency exchange rates. In the last few years, that hasn't been the case, and this divergence between theory and practice has yet to be adequately explained. Third, why is the volatility of the dollar-denominated Libor so much lower than the volatility of other short-term credit market rates? Just like stocks and bonds, short-term interest rates experience a certain volatility. But Libor has less severe swings than comparable rates. In addition, the variation in rates that some banks submit to the British Bankers' Association (the private group that oversees Libor) don't seem to match the variation in the rates for their credit default swaps (financial instruments that are similar to insurance and are one measure of a bank's credit risk). There have been times when the swap rates have widened for particular banks (suggesting a growing credit risk) even as their Libor submissions have remained stable (suggesting that the banks' borrowing costs haven't changed). Anyone saving or borrowing for the future has a real stake in the integrity of Libor and in the answers to these questions." (Gensler, 2012)

Gensler was pointing to all the evidence that something was wrong with the Libor index, not properly coordinating with swings in interest rates and displaying surprisingly low volatility. Why previously had no government regulator examined this suspected accuracy of the Libor index? Perhaps it was because many of the government regulators at the time had instead espoused a policy of 'deregulation', believing that financial markets always perform 'perfectly'. If individuals as regulators do not believe in the efficacy of government regulation, they can ignore all the empirical indices of corruption, in a societal system they are supposed to be regulating. *Particular individuals' characters provide a historic 'context' to any sociological institutional process (e.g. bureaucratic rationality); just as conversely,*

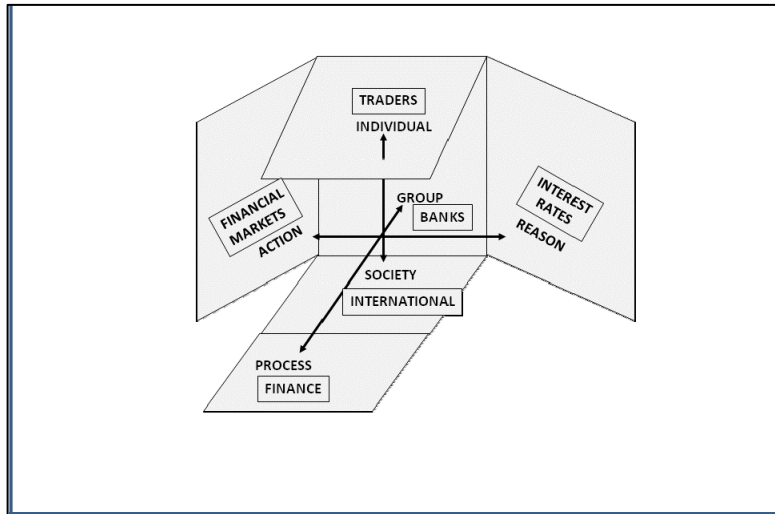
*institutional procedures provide a historic context to individual behaviors.*

What Gensler uncovered in his U.S. investigation of libor was fraud by individuals — not traditional crooks, thieves, but merely white-collar employees ‘gaming a system’. Floyd Norris wrote: “The Libor market, we now know, was a fraud. There were few, if any, real trades backing the indicator. This week the scandal claimed its second top European banker and treated us to more of those delightful emails and electronic chats in which traders discuss their deceptions. ‘Don’t worry mate — there’s bigger crooks in the market than us guys!’ wrote an official of Rabobank, the large Dutch lender, after he agreed to a request from one of the bank’s traders in 2007 to submit a phony rate for Libor rates in yen. He was right about that. As more cases are disclosed, there will no doubt be more big fines and more assurances from senior executives that they had no idea what was going on” (Floyd Norris, 2013)

As finally the fraud was revealed, then some regulatory punishments began. Floyd Norris wrote: “This week’s penitent financial institution, Rabobank, showed just how international a fraud this was. The bank settled with authorities in the Netherlands, Britain, Japan and the United States. The authorities said the fraud was carried out by more than two dozen traders and managers at the bank’s offices in London, New York, Utrecht, Tokyo, Singapore and Hong Kong. The bank’s chairman resigned. When the Libor scandal exploded last year, with Barclays as the initial villain, there was a narrative that made the violations seem understandable and perhaps provoked at least a little sympathy for the banks. They had lied about their borrowing costs during the financial crisis, concealing how difficult a time they were having. Perhaps they should not have done so, but who was really harmed? It turns out that the financial crisis did not cause the fraud; it merely made it so obvious that regulators finally noticed. It had been going on for years, aided by an international culture that treated market manipulation as a matter of course. If a bank did not have its own good reason for manipulating the market, then a trader would agree to do so as a favor for a trader at another institution. Why not? Maybe he would need a favor on another day. ‘You know, scratch my back, yeah, and all,’ a Rabobank trader said.” (Floyd Norris, 2013)

Now we analyze the Libor event in the cross-disciplinary framework of societal dynamics (Figure 3).





**Figure 3. Labor Event of 2011-2013**

**INDIVIDUAL**— In the Libor event, the *Individuals* involved were traders employed by integrated banks, such as Barclays.

**SOCIETY** — The *Society* was the international financial society, involving many nations.

**GROUP** — The *Group* consisted of many banks in different nations, British, European, and American.

**PROCESS** — The *Process* focused upon Finance, specifically the financial transactions of loans.

**ACTIONS** — The *Action* was the manipulation of Libor index for the Financial Markets around the world.

**REASON** — The *Reasoning* focused upon establishing appropriate interest rates for loans, based upon the rates of current short-term loans between banks — establishing interest rates that would be beneficial to a bank’s profits from trading.

Libor was supposed to be a daily average rate-of-interest on inter-bank loans (interest rate on over-night loans between banks, in order to help balance their previous day’s transactional accounts). The Libor index was used to set, on a daily basis, a whole range of interest rates on different kinds of loans (mortgages, etc.) However, traders in banks made daily bets on the direction of various kinds of interest rates; and they wanted the Libor rate to go up or down, in correspondence with their recent bets on interest rates. So they conspired to fix the Libor rate – a fraudulent bank practice by some but not all banking employees (mostly involving traders in the large integrated banks in Europe and America). These traders in banks were not really ‘trading’ – buying and selling things. They were gambling, making bets on the directions of interest rates.

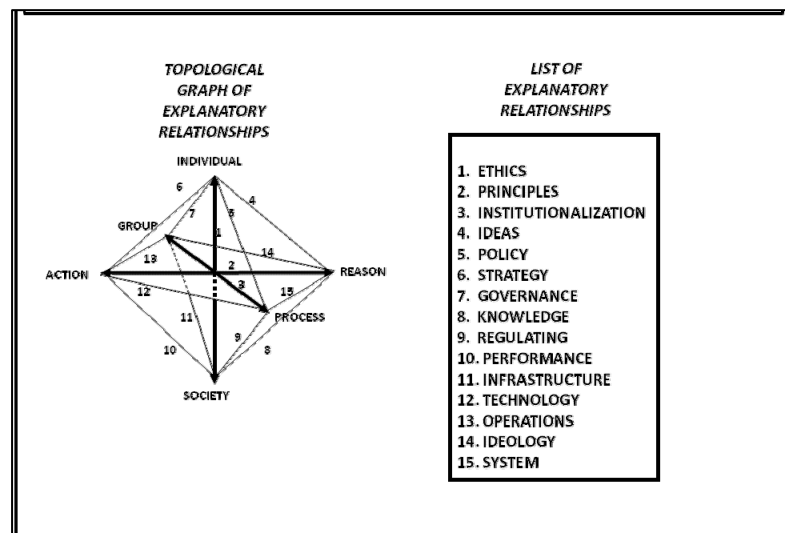
In this analysis, we see that trading individuals in integrated banks were the culprits in abusing the Libor rates. Also the banks (which had been called ‘too-big-to-fail’ by U.S. and European regulators in the Global Financial Crisis of 2007-08) were complicit in the fraudulent manipulation of the rates. The financial system ‘*Reasoning*’ for the Libor index was distorted (abused, misleading, manipulated) by the ‘traders employed by integrated banks, such as Barclays’.

*The ‘Reasoning’ in economic systems depends empirically not only on the rationality of economic*

agents, but also upon the ethics of economic agents — which is an important connection between macro-economic theory and micro-economic theory. 'Reasoning' is an important connection between individuals and their society, in any institutionalized societal system.

#### 4. Explanation in the Libor Case

Next we analyze the explanations of this event, how the fraud occurred, using societal dynamics theory. In the physical sciences, the explanation of 'causality' (cause and effect) is essential; and yet 'causality' is methodologically inappropriate for explanations in the social sciences. The physical sciences use the scientific paradigm of 'Mechanism' in which causality is the explanatory relationship in a physical event. However, instead of 'Mechanism', the social sciences use the scientific paradigm of 'Function'. Thus in a cross-disciplinary social science, one needs to ask what kinds of explanations are methodologically appropriate to the social sciences, to the observation of a societal event? And one can find this by constructing a topological graph in the societal perceptual space (Betz, 2011), as shown in (Figure 4).



**Figure 4. Explanations in a Historical Societal Event as Relationships Between the Principle Factors**

The six dimensional-points of the space can be connected by fifteen lines as a topological graph. Each graph relationship provides a kind of explanation connecting two factors. (Topology is a field of mathematics concerned the connectedness of geometrical forms, and topological graphs display this connectivity as lines connecting points in the geometrical form.) The societal dynamics event-graph displays the kinds of explanations which can connect the principle factors in a historical event, as fifteen kinds of explanations:

**1. Ethics** — The explanatory relationship between *Individual-Society* can be called the *ethical context*

in the explanation of an historical event.

**2. Principles** — The explanatory relationship between *Reason-Action* can be called the *principles-of-order* in the explanation of an historical event.

**3. Institutionalization** — The explanatory relationship between *Group-Process* can be called the *institutionalization* in the explanation of an historical event.

**4. Ideas** — The explanatory relationship between *Individual-Reason* can be called the *ideas* which an individual uses in reasoning.

**5. Policies** — The explanatory relationship between *Individual-Process* can be called the *policies* an individual in power formulates to control social processes.

**6. Strategy** — The explanatory relationship between *Individual-Action* can be called the *strategy* in which a leader formulates the direction for action.

**7. Leadership** — The explanatory relationship between *Individual-Group* can be called the *leadership* of an individual in guiding the efforts of a group.

**8. Knowledge** — The explanatory relationship between *Society-Reason* can be called the *knowledge* which a society has to use.

**9. Regulating** — The explanatory relationship between *Society-Process* can be called the *regulation* of activities within the infrastructure of the society.

**10. Performance** — The explanatory relationship between *Action-Society* can be called the *performance* attained by processes in societal sectors.

**11. Infrastructure** — The explanatory relationship between *Group-Society* can be called the social *infrastructure* which groups provide in building and operating sectors of a society.

**12. Technology** — The explanatory relationship between *Action-Process* can be called the *technology* used in a process in producing an action.

**13. Operations** — The explanatory relationship between *Action-Group* can be called the *operations* of the group which produce a group action.

**14. Ideology** — The explanatory relationship between *Group-Reason* can be called the *ideology* as the concepts groups use to associate and justify association, the ideology of a group.

**15. System** — The explanatory relationship between *Process-Reason* can be called the *system* of controlled process in the societal event.

This list is a cross-disciplinary in the kinds of explanations used in the different social science disciplines; and it is particularly useful in describing the complexity of societal events. It provides both a generality and a logical completeness, for comparing explanations across different historical events and across different societies. We next use these kinds of explanations to understand the Libor case.

The Libor index fraud attracted attention because of its widespread use in setting interest rates in the financial systems of the world. Peter Eavis wrote: “A multiyear, global investigation into the setting of interest rates has focused on often complex trades in the financial centers of New York, London and Tokyo. But the accusations in the case have real-life consequences for consumers and businesses in the

United States. Banks around the world use financial benchmarks to set the interest rates on many of the loans they make... Given its extensive reach, it would seem critical that Libor be calculated in an impartial and transparent manner. But the opposite seems to have been the case. In a settlement announced Wednesday, regulators in the United States and Britain said that the British bank Barclays had manipulated Libor to increase its traders' profits over several years. Barclays agreed to pay over \$450 million to resolve the accusations; other large banks are expected to enter similar settlements.” (Eavis, 2012) *This Libor fraud by some individuals had major consequences for all society, impacted by an institutionalized societal system — the global financial system.*

A private banking association was supposed to oversee the Libor rate for honesty; and it claimed it did. Thomas Landon Jr. wrote: “According to the association’s Web site, the body within the trade group that has the ‘sole responsibility’ for all aspects of the functioning and development of BBA’s Libor, as the group refers to Libor, is called the foreign exchange and money markets committee. That committee is composed largely of bankers and financial professionals, according to association officials. The committee meets at least every other month. The meetings are open to regulators and central bankers from around the world, although they do not attend on a regular basis. In what would seem to be a conflict, the committee chairman is a representative from the panel of banks, which includes some of the world’s biggest institutions — like Barclays, Citigroup and UBS — that submits the rates that become the Libor average.” (Landon, 2012)

However, the Association itself was not under government oversight, so regulation of the Libor rate was left entirely to a private organization — which however failed to do what it claimed. Peter Eavis wrote: “The British Bankers’ Association is not regulated. It is conducting a review of how Libor is set but has not said when that will be completed. The group says regulators ‘are engaged’ with the review and ‘will be kept fully informed.’ Brian Capon, a spokesman, said in an e-mail, ‘The review is industry-led, so the authorities are not direct participants.’” (Eavis, 2012)

In hindsight, some former British regulatory authorities did see that letting a private banking organization oversee such an important financial index was, perhaps, not so wise after all. Landon Thomas Jr. wrote: “Angus Armstrong, a former official at the British Treasury who is now director of research at National Institute of Economic and Social Research, a research organization, argues that the markets that use Libor have become too large and complex for the rate to be set and governed under the longstanding method. Central banks, he noted, use the rate as a benchmark when they intervene in the market, making it extremely important from a regulatory perspective. ‘It is perhaps an anomaly that the B.B.A., an organization representing the banking industry, is solely responsible for overseeing an interest rate process that is of such wide importance,’ Mr. Armstrong said. With other banks soon to be implicated in the Libor scandal, it may be that the mutual trust that long underpinned the rate-setting process no longer holds. ‘I was surprised to see a bank like Barclays do this. In my time there was an ethic and you assumed that everyone was a gentleman,’ Mr. Zombanakis, the Libor pioneer, said. ‘But I guess it was inevitable, as the market got bigger and bigger, things got out of control.’” (Thomas, 2012)

*Self-regulation of a societal system by private organizations of the system does not guard against fraud and abuse of the system. It is a proper role of government regulation to ensure the 'private good' of a self-regulating societal system is not abused by individuals, destroying the public good of the system. Free-market economic systems require proper governmental regulation to guard against abuse and corruption. The next challenge is to ensure against corruption of the regulators.*

Who manipulated the index-rate? Ben Protess and Mark Scott wrote: "In the Barclays case, regulators say they uncovered 'pervasive' wrongdoing that spanned a four-year period and touched top rungs of the firm, including members of senior management and traders stationed in London, New York and Tokyo. A 45-page complaint laid bare the scheme that unfolded from 2005 to 2009, describing how Barclays had made false reports with the aim of manipulating rates to increase the bank's profits. Barclays was also accused of 'aiding attempts by other banks to manipulate' Euribor' ... Traders seeking favorable rates received a welcome reception from bank employees who set the benchmark ... The practice of submitting false numbers prompted unease among some employees, who worried the bank was 'being dishonest by definition'." (Protess & Scott, 2012)

The evidence for the investigation of the fraud was established by subpoenaing the email of banks suspected in the manipulation. Peter Eavis wrote: "Regulators say they found dozens of communications from 2005 to 2009 in which derivatives traders pressed another group of Barclays employees to try to influence Libor... In the findings for the Barclays settlement, the Justice Department said, 'the manipulation of the submissions affected the fixed rates on some occasions'." (Eavis, 2012)

Some of the incriminating email was obtained from the Dutch bank Rabobank. Andrew Ross Sorkin wrote: "Rabobank, which began life as an agriculture cooperative in the Netherlands in the late 19th century, has become the largest Dutch lender and a modest player on the stage of world finance. On Tuesday, it also joined the ranks of institutions tarnished by the global rate-setting scandal. Rabobank is the fifth financial firm to settle investigations related to its role in manipulating the benchmark known as the London interbank offered rate, or Libor, which helps set consumer and corporate borrowing rates around the world... The Financial Conduct Authority of Britain says that Rabobank tried to manipulate yen Libor rates by colluding with brokers.

"It gives this November 2010 exchange. *Broker 1*: ok we need lower libors tomorrow yes? *Trader 1*: Yeah ... *Broker 1*: ok ill work some magic for tomorrow.

"From the middle of 2005 through 2008, a senior derivatives trader known as the Ambassador made requests for preferential Libor submissions, the Commodity Futures Trading Commission says in its order. If the Ambassador's requests were not honored, he "complained and angrily expressed his displeasure," says the order, which gives the following 2006 exchange (all caps in the original): *U.S. Dollar Trader*: HI MATE, LOW 1S HIGH 3S LIBOR PLS!!! DONT TELL THE MBASS HAA HAAAAAAA. SOLD THE MARKET TODAY DOOOOHHHH! Senior Manger 1: OK MATE, WILL DO MY BEST....SPEAK LATER *U.S. Dollar Trader*: CHEERS GEEZ, BANG ON THE MONEY!

*Senior Manager 1*: NO WORRIES, I HAD TO WORK MY WAY OUT OF AN AMBASS HEADLOCK TO GET THOSE IN!

“Some of the exchanges cited by regulators indicate how commonplace and easy it was for traders to submit rate requests, like this October 2008 yen Libor exchange. *Yen Desk Manager 1*: Morning, mate, alright? .... LIBORS today, LIBORS, LIBORS, same? *Senior Manager 1*: Where want ‘em? *Yen Desk Manager 1*: .... smidgen lower?”

“In rate manipulation schemes, as with many things, communication can be crucial, as this 2010 missive makes clear. ‘WHY DID YOU PUT ALL THE YEN LIBORS HIGHER FOR TODAY WITHOUT TELLING ME? WHERE IS THE TEAM PLAY? YOU KNOW WHAT MY POSITION IS? I CAN’T BELIEVE YOU DID THIS WITHOUT TELLING ME’” (Sorkin, 2013a)

The blatancy of the fraud exposed in such ‘e-mails’ surprised some observers. Joe Nocera wrote: “Here in the early stages of the Libor scandal — and, yes, this thing is far from over — there are two big surprises. The first is that the bankers, traders, executives and others involved would so openly and, in some cases, gleefully collude to manipulate this key interest rate for their own benefit. With all the seedy bank behavior that has been exposed since the financial crisis, it’s stunning that there’s still dirty laundry left to be aired. We’ve had predatory subprime lending, fraudulent ratings, excessive risk-taking and even clients being taken advantage of in order to unload toxic mortgages ... The word is that just about every big bank is under investigation for playing games with Libor, including JPMorgan Chase, Citigroup and other American-based financial giants.” (Nocera, 2012)

*The abusers were important institutions and high-level individuals in the banking system, and all displayed no ethical constraint nor commitment to public good.*

## **5. Issues of System ‘Control’ in Libor**

Next we can analyze control in (Figure 5). ‘Libor’ was an index used in the *Control* of the Managed Systems of Banks as a guide to setting interest rates on all kinds of loans. The *Group* involved were the banks in many the countries of the world. The *Reason* was thinking about how to establish a measure of interest rates in financial markets based upon one current activity of loans between banks. The *Society* involved in the Libor case was international, banks in many different countries using the index- rate.

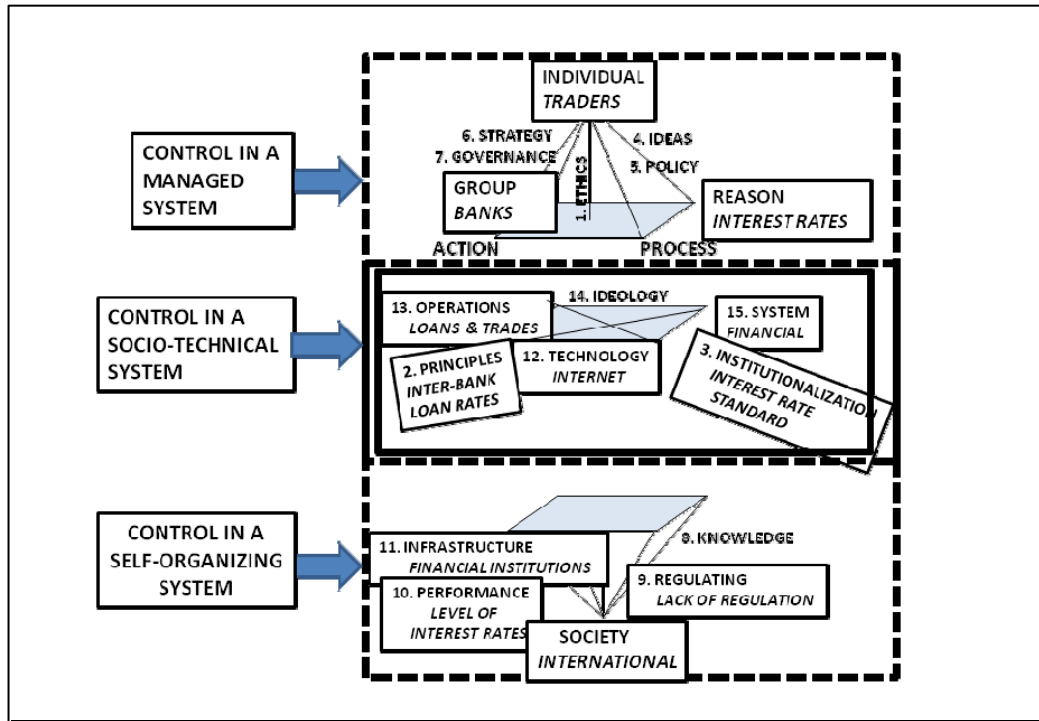


Figure 5. Labor in the Control Issues of Financial Systems

The Libor rate was of particular interest to *Traders* in banks, trading on the differences between loans, exchange rates, etc. The (15) *System* involved was the financial systems in different nations. The (13) *Operations* are loans and trades, facilitated by financial transactions over the (12) *Technology* of the Internet. Interest rates on different types of loans were (3) *Institutionalized* under a general standard of the (2) *Principle* of the Libor rate. The (11) *Infrastructure* was the financial institutions, providing a societal level of (10) *Performance* for finance at current levels of interest rates. But the Libor rate lacked effective government (9) *Regulation*, depending only on a London private bank association which allowed abuse of the Libor rate-setting. One sees that the failure of societal control in the principle of Libor as a current interest rate standard was a failure in the (9) *Regulation* of the self-organizing system of the (11) *Financial Infrastructure*.

Traders were the *Individuals* employed in the trading divisions of banks, who urged the manipulation of Libor rate as their (6) *Strategy* for fraudulent trading which generated large profits for the banks; and in the (7) *Governance* of the banks, top management ignored the fraud, as traders were generating large profits. Cheating was the (1) *Ethics* practiced by the participating traders and silently condoned by their top management overseers. *Traders made bets on the direction of interest rates; and by manipulating the base Libor rate, tilted interest rates, up or down, in the direction of their bets.*

The bankers' self-organized (9) *Regulating* board simply did not regulate the Libor rate setting procedure, even though rumors of fraud were rampant in the trading community. The rule for (9) *Regulation*, used by the self-organized British Bankers' Association, was to 'see-no-evil' and

‘hear-no-evil’.

It was not European but U.S. government regulators who uncovered the scandal. Joe Nocera wrote: “One of the big criticisms of the original team of financial regulators brought in by President Obama is that too many of them had worked in Bill Clinton’s Treasury Department. That, of course, was the Treasury Department run by Robert Rubin and then by Lawrence Summers — an agency with a bias toward deregulation. Those regulators had supported the elimination of Glass-Steagall, the 1930s law that separated investment banks from commercial banks, and were disinclined to regulate derivatives, ‘those financial weapons of mass destruction,’ as Warren Buffett liked to call them. One of those old Rubin hands was Gary Gensler. An 18-year veteran of Goldman Sachs, Gensler had been the assistant secretary of financial markets under Rubin, and then later undersecretary for domestic finance, and he shared his boss’s deregulatory bias. When President Obama was picking his regulatory team, he chose Gensler to be the chairman of the Commodities Futures Trading Commission. Now, Gensler is about to leave that post. And if people once doubted how tough he would be as a regulator, there is no doubt now: he may well be the single best appointment Obama made.” (Nocera, 2013)

The change in the American regulatory environment was a new law passed in 2009, which finally gave government authority to regulate financial derivatives. Joe Nocera wrote: “When Gensler came into office, the CFTC’s job was to regulate the futures market. It was a small agency, with fewer than 700 employees. Then came the Dodd-Frank reform law, which gave the commission enormous new responsibilities. It was charged with writing dozens of rules to regulate derivatives, and to oversee a \$400 trillion market. ‘I hadn’t realized how much authority was delegated to regulators,’ he said. But he embraced the challenge. Derivative trades had always been conducted in the shadows. Gensler brought them into the light ... Thanks to the trading commission’s new rules, the government now has a good feel for the derivatives market. And the added transparency has also had the effect of lowering prices, which is what inevitably happens when all the market participants can see what is being bought and sold ... If regulating the derivatives market were all Gensler had done, it would have been plenty. But the CFTC was also the agency that cracked the Libor scandal. A few months after being sworn in, in May of 2009, he saw an article about Libor — the interest rate banks charge to each other for interbank lending — that piqued his curiosity. ‘I asked our head of enforcement — should we look into this?’ The result, three years later, was the unveiling of an enormous scandal involving traders at more than a dozen financial institutions. Gensler said: ‘I remember thinking that if it’s true — that the Libor rate was being manipulated by traders — that is a really bad thing ... It took 20 months before we had actionable evidence ... which finally happened last year.’ Barclays then agreed to pay a fine of \$450 million for manipulating the Libor rate. Subsequently, the CFTC settled with five other financial institutions. A handful of traders had been indicted.” (Nocera, 2013)

This example emphasizes the particular roles which different individuals play in institutions of a society. Although in official positions for government regulation of financial systems, some individuals, such as Robert Rubin and Lawrence Summers, did not believe in regulation and so did little or no



regulation when they occupied their institutional positions. In fact, both were active in getting U.S. laws passed in 1999, which ‘deregulated’ U.S. banks from their restrictions of the Glass-Steagall act. This allowed the ‘too-big-to-fail’ banks to integrate, which set the context for the global financial collapse in 2007-08 passed 60 years earlier. See for example (Morgenson and Rosner, 2011) and (Betz, 2014). In contrast, when Gensler (also a former banker like Rubin) took up a regulatory position, he acted to regulate the societal system of finance by investigating the Libor fraud. Individual character matters in the social science of institutional behavior. This provides additional evidence for the proposition that all ‘grand’ social theories (such as macro-economics) can never be ‘context-free’ — but instead are always context-dependent upon the time place and individuals in the history of societal events. Here no macro-economic theory (e.g., problems or benefits of economic regulation) can never be context-independent (as Rubin and Summers supposed). *Methodologically, macro social science theory (grand theory) should always be expressed empirically in a context of a micro theory of societal history (middle-range theory).*

What next happened institutionally to the regulation of Libor, government regulation? No. There was a transfer from British to American shores, and it remained under private non-regulation. Nathaniel Popper wrote: “The administration of a distinctly British institution is being handed over to an American company. The parent company of the New York Stock Exchange won a contract on Tuesday to administer and improve the benchmark interest rate known as Libor, long run by the British Bankers’ Association. The move could help provide a fresh start for Libor, or the London interbank offered rate, which is used to determine the cost of short-term loans around the world. The banks that help set the rate each day have been accused of conspiring to rig the rate for their own benefit before and during the financial crisis, leading to billions of dollars in fines and a few arrests. The move is a symbolic blow to a British financial industry that has been rocked by scandals and forced to look to the outside for leadership. Last week, a Canadian, Mark Carney, took over leadership of the Bank of England. The London Stock Exchange was among the four companies that also bid for the Libor contract, said a person briefed on the process, who spoke on the condition of anonymity ahead of a public announcement.” (Popper, 2013)

Not everyone was pleased with the decision to continue the international financial index, under private operation. Floyd Norris wrote: “Mr. Gensler said in his speech: ‘In the U.S., Libor is the reference rate for 70 percent of the futures market and more than half of the swaps market. It is the reference rate for more than \$10 trillion in loans. Such a huge market created ample incentives to cheat ... The frauds being prosecuted now involved interest rate manipulations of only a few hundredths of a percentage point ... Unfortunately, nothing fundamental is being changed. Libor lives on.’ Regulators who wanted to change that, most notably Mr. Gensler, have been outmaneuvered by those who did not want to risk damaging one of the biggest and most lucrative markets around.” (Norris, 2013)

However, some assignments of irresponsibility did occur. Ben Protess and Mark Scott wrote: “Regulators delivered the first blow in a major investigation into whether big banks had improperly set

key interest rates that affected how consumers and companies borrowed money around the world. On Wednesday, Barclays agreed to pay \$450 million to resolve accusations that it had tried to manipulate rates to benefit the bank's own bottom line. . . The settlement is the first in a series of potential cases against other financial firms, including HSBC, Citigroup and JPMorgan Chase ... The Barclays settlement, which offers clues about the scope of the inquiry, may provide a template for future actions.” (Protess and Scott, 2012)

British indignation about banking (despite previous failure of British regulatory effort) assigned responsibility to an ‘American’, as head of the British bank of Barclays. Ben Protess and Mark Scott wrote: “Robert Diamond, the bank’s chief executive, expressed contrition and underscored the recent changes at Barclays. Mr. Diamond said that he and three other top executives had voluntarily agreed to give up their bonuses this year. Most of the traders involved in the case have left the bank, according to people briefed on the matter. Mr. Diamond said in a statement: ‘The events which gave rise to today’s resolutions relate to past actions which fell well short of the standards to which Barclays aspires in the conduct of its business. When we identified those issues, we took prompt action to fix them and cooperated extensively and proactively with the authorities.’” (Protess and Scott, 2013) *The cultural context of individuals, of course, contribute to their ethical orientation in societal institutional procedures.*

First, the chairman of Barclays resigned. Mark Scott and Michael J. De La Merced wrote: “Marcus Agius, the chairman of Barclays, resigned on Monday, less than a week after the big British bank agreed to pay \$450 million to settle accusations that it had tried to manipulate key interest rates to benefit its own bottom line ...’ A former banker at Lazard, Mr. Agius joined the Barclays board in 2006 and became its chairman in 2007. He was also the honorary chairman of the British Bankers’ Association, the organization that oversees one of the key rates in question, the London interbank offered rate, or Libor. Mr. Agius tendered his resignation as chairman of the trade association on Monday.” (Scott and De La Merced, 2012)

Also Mr. Diamond’s regrets were not sufficient for British regulators. Andrew Ross Sorkin wrote: “ The conventional explanation is that Diamond, 61, was ousted last July after regulators in Washington and London uncovered a ‘pervasive’ scheme by several banks, including Barclays, to manipulate a key interest-rate benchmark known as the Libor, or London interbank offered rate ... Despite all the headlines — and there were hundreds of them — Bob Diamond’s role in the scandal was minimal, and perhaps wildly overblown. It may have been the nominal cause for his dismissal, but what really drove his departure was that he had become, as one member of Parliament described him, the ‘unacceptable face of banking’ ... On July 2, less than a week after the Libor scandal broke, King summoned Barclays’ chairman, Marcus Agius, to his office, in the imposing Bank of England Building in the heart of London’s financial district. According to Agius, King told him, ‘Bob Diamond no longer enjoyed the support of his regulators.’ The next morning, Diamond resigned ... Martin Wolf of The Financial Times said: ‘After the financial crisis, the British establishment became very divided over what’s the model

for the big banks that we want to see. Bob represented investment banking big time. He represented the success of it — but also the sense that investment banking is dicey and not a completely sound business. He represented a way of doing business that we’ve become very uncomfortable with’.” (Sorkin, 2013)

A few other bank officers resigned, particularly those who were supposedly in charge of ensuring banking honesty, the compliance officers. Julia Werdigier wrote: “Barclays said on Wednesday that Hector W. Sants would not return to his post as compliance chief after taking a leave of absence because of exhaustion and stress last month. Mr. Sants, a former head of Britain’s financial regulator, resigned after concluding that he would not be able to return to work in the near term, Barclays said in a statement ... Mr. Sants is not the only senior financial executive in London to take a leave in recent years because of stress. But his resignation stands in contrast to the actions of António Horta-Osório, chief executive of the Lloyds Banking Group, who returned to the bank after a two-month leave at the beginning of 2012.” (Werdigier, 2013)

Traders with explicit emails about the fraud were placed on leave. Chad Bray wrote: “Nearly a dozen traders have been placed on leave at five large banks in recent days, amid a wide-ranging investigation into potential manipulation of the foreign-exchange market. Authorities in Britain, the United States, Switzerland and Hong Kong are investigating whether traders colluded to rig some areas of currency trading, a market that overall generates more than \$5 trillion of trades daily. In particular, they are looking at discussion logs in chat rooms between currency traders at various firms and whether those discussions corresponded with improper trading activity, according to people briefed on the investigation. On Friday, two British banks, Barclays and Royal Bank of Scotland, both placed traders on leave amid heightened scrutiny by regulators ... Six traders were placed on leave at Barclays and two traders were placed on leave at Royal Bank of Scotland, these people said. They join currency traders who were placed on leave at Citigroup, Standard Chartered and JPMorgan Chase in recent weeks. In many cases, the traders have been placed on paid leave pending the outcome of the investigation ...” (Bray, 2013)

With the explicit emails, some traders were then indicted. Mark Scott wrote: “Two former brokers at RP Martin Holdings made their first court appearance in London on Friday in connection to charges tied to the manipulation of global benchmark interest rates ... Both sets of charges contend that the men conspired with employees of UBS, the Dutch bank Rabobank, HSBC and other financial institutions to manipulate the benchmark rates for personal financial gain, according to the charge sheet.” (Scott, 2013)

Some traders were convicted and sentenced. Peter J. Henning wrote: “At the sentencing hearing for Kareem Serageldin, a former senior executive at Credit Suisse, Judge Alvin K. Hellerstein of the Federal District Court in Manhattan pointedly asked why someone in such a position would engage in misconduct. The judge asked, ‘Why do so many good people do bad things?’ That is the conundrum of many white-collar crime cases: successful business people act in ways that put careers and personal fortunes at risk for seemingly modest gains, and sometimes the misconduct benefits their company but

themselves only indirectly. Mr. Serageldin was the global head of the structured credit group at Credit Suisse, responsible for overseeing its subprime mortgage securities portfolio. He was indicted in February 2012 for inflating the value of bonds held by the bank to cover up losses as the collapse in the housing market hit in late 2007. As seen in other recent cases, there were recorded telephone conversations in which Mr. Serageldin and other defendants discussed keeping the prices high to protect their positions in the hope that the housing market would turn around. When internal inquiries into the valuations were made, the defendants did their best to cover up what they had done, a losing battle that led the bank to disclose the mismarking in February 2008. Judge Hellerstein imposed a 30-month prison term, a punishment below the recommended sentence for the violation. In explaining the reason for the reduction, the judge noted that Mr. Serageldin's conduct 'was a small piece of an overall evil climate inside that bank and many other banks.' (Henning, 2013a)

Other observers were also puzzled about the ethics. Peter Henning also wrote: "Perhaps misconduct by some groups can be ascribed to the belief that so long as everyone else seems to be doing something, it cannot actually be wrong. Continuing investigations into global banks' manipulation of the London interbank offered rate, or Libor, as well as foreign currency exchange rates are replete with examples of traders exchanging information and boasting of their ability to artificially raise or lower a benchmark rate. These are not isolated instances, but part of a pattern of conduct over months and even years. So it cannot be chalked up to the heat of the moment. What is so puzzling about people who have led otherwise good lives is that they are unlikely to have engaged in the misconduct if it is presented to them in stark terms. Ask a Wall Street trader, for example, whether he or she would trade on material nonpublic information received from a corporate insider, and the answer from most would be 'no' — at least if there was a reasonable chance of being caught. But under pressure to produce profits for a hedge fund or a bank, traders are often on the lookout for an 'edge' on the market that can slowly take them closer to crossing the line into illegality." (Henning, 2013a)

For the banks involved, the consequences of violating financial regulations were costly. Jack Ewing and Chad Bray wrote: "European banks still face years of effort and billions of dollars in legal charges before they can restore their reputations and reconcile accusations of past wrongdoing, judging from financial reports on Tuesday by several of Europe's largest lenders. UBS in Switzerland and Deutsche Bank in Germany reported enormous expenses for current and future legal problems ... Separately, the British bank Lloyds set aside more money to compensate customers for inappropriate insurance products. The disclosures suggest that European banks are under pressure as never before to address past sins." (Ewing and Bray, 2013)

Yet the problem remained about the proper regulation for both banks and financial markets. Chad Bray and Jack Ewing wrote: "Demonstrating a new resolve to punish bank misconduct, the European Union fined a group of global financial institutions a combined 1.7 billion euros (\$2.3 billion) on Wednesday to settle charges that they colluded to fix benchmark interest rates ... Still, the action on Wednesday showed some of the limits to the European Union's ability to ride herd on financial institutions. The

settlement was announced not by bank regulators but by antitrust officials, highlighting Europe's lack of a central financial markets enforcer with powers similar to the Securities and Exchange Commission or the Justice Department in the United States, or the Financial Conduct Authority and the Serious Fraud Office in Britain. Nor are there any concrete plans to create such an enforcer for the European Union ... The European Central Bank will take over supervision of banks in the euro zone next year as part of efforts to create a banking union. But even then, the E.C.B. will not have police powers or direct responsibility for financial markets. 'There is a big need for better supervision of financial markets in Europe,' said Falko Fecht, a professor at the Frankfurt School of Finance and Management. 'We don't have a single supervisor for financial markets. This is a flaw in the design of the banking union so far.'"<sup>44</sup> (Bray and Ewing, 2013) Global financial markets remained unregulated as a whole — only partly regulated as a market in an individual country — more or less, with an unfortunate financial history of 'less' regulation than was needed at the time (such as in Libor in 2011, or in the Global Financial Crisis of 2007, or in the Asian Financial crisis of 1997).

#### **6. Libor and the Challenge of Self-Organizing Control in Financial Markets**

The self-organizing view of a societal system can be further analyzed by viewing 'explanatory relations', connecting the different classes of Individuals to the Society. In (Figure 6), the graph analyzes these interactions in the forms of two kinds of managed-systems, government and business, above a socio-technical system (e.g. financial system) of a self-organizing society (nation). From this view, one sees that no single person is in charge of the basic societal systems of politics and of economy. No one is in charge of a self-organizing society; instead individuals are in charge of managed-systems of government organizations and managed-systems of business organizations. Both kinds of managed-systems, government agencies and business companies constitute the infrastructure, of the self-organizing aspects of society.

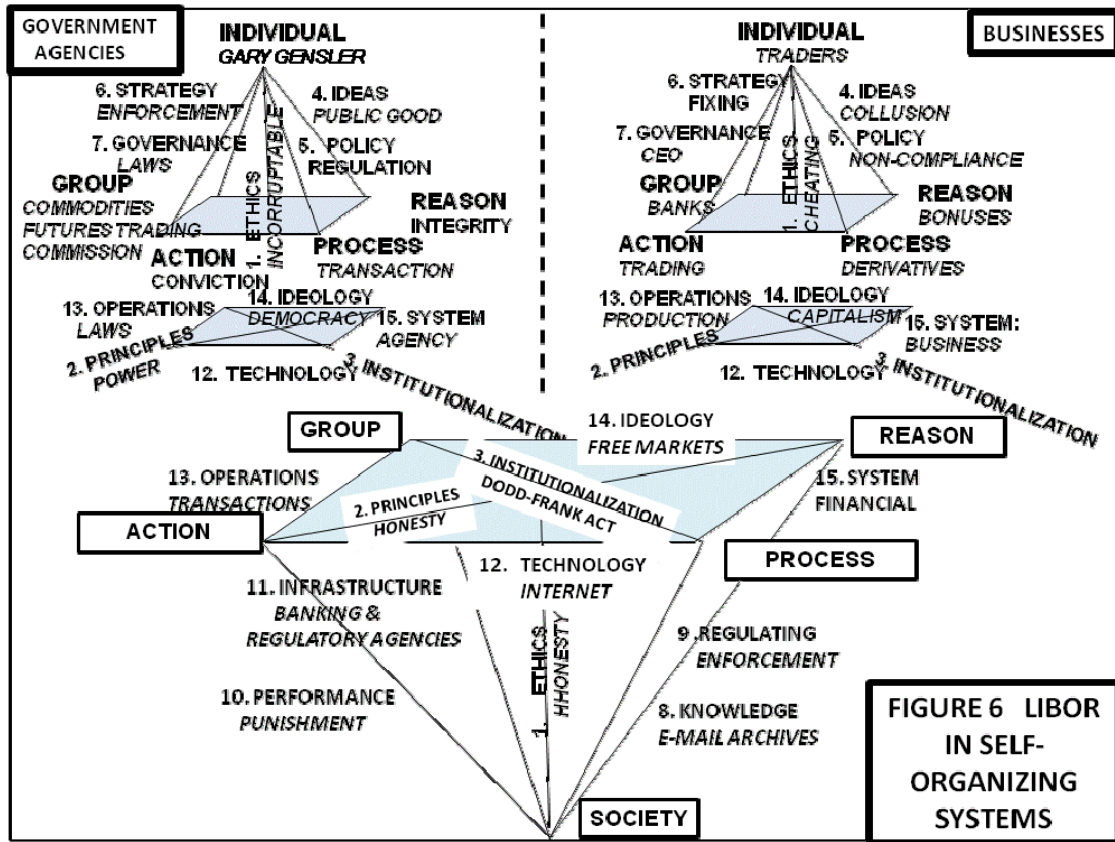


Figure 6. Labor in Self-Organizing Systems

Looking to the right side of the explanatory topology at the Businesses, one sees that the *Individuals* were the traders employed in the *Group* of banks. The traders’ (6) *Strategy* was to fix the Libor rate, using their (4) *Idea* of collusion with bank employees, resulting in a shared (1) *Ethics* of cheating. Their *Reason* was to gain bonuses from their *Actions* of fixed trades, in the *Process* of derivatives trading. The (7) *Governance* of the banks by their CEOs turned a ‘blind eye’ away from seeing such collusion. The banks’ (5) *Policy* was not to enforce compliance about bank integrity.

In contrast, looking to the left side of the explanatory topology at the Government Agencies, a key *Individual* was Gary Gensler, head of the Commodities Futures Trading Commission in the *Group* of regulatory government agencies. Gensler’s (4) *Ideas* were about the public good which can be attained through a (5) *Policy* of government regulation. His agency’s *Action* was to convict individuals and banks which violated the (7) *Governance* laws on the *Process* of financial transactions. The *Reasoning* of the agency was to ensure the integrity of financial transaction. The (1) *Ethics* of the agency was incorruptibility — to serve without corruption and to find and convict corruption in the financial trading system.

Operating in the socio-technical financial system were two managed-systems of government agencies and private businesses. Together these provided the (11) *Infrastructure* of the nation’s financial (15) *System*, with the (13) *Operations* of financial transactions, under the (14) *Ideology* of free markets,

using the (12) *Technology* of the Internet for financial business. The (3) *Institutionalization* of the law of the Dodd-Frank Act provided the (2) *Principles* of honesty legally in the (9) *Regulation* of the financial system. The Commodities Futures Trading Commission enforced this (9) *Regulation* of the derivatives markets for the (1) *Ethics* of honesty — enabling an honest (1) *Performance* through punishment of corruptions in the (15) *Financial System*.

## 7. Results

To understand this historical case of financial manipulation, we have cross-disciplinary analyzed the historic ‘how-who-why’ of the event. Within the single social science discipline of economics, traditional macro-economic theorists might have labeled the event as merely a ‘market failure’. But any significant manipulation of a financial system goes beyond a ‘simple failure’ to the very ‘essence’ of a market. The economic heart of any financial system lies in its ‘integrity’. For example, Hyman Minsky wrote: “Banking is not money lending ... The fundamental banking activity is ‘accepting’ , that is, ‘guaranteeing’ that some party is credit worthy. A bank, by accepting a debt instrument, agrees to make specified payments if the debtor will not or cannot. Such an accepted or endorsed note can be then sold in the open market.” (Minsky, 2008)

Bank finance needs to be conducted in an honorable way, as financial integrity in the guaranteeing of the credit of a borrower. This guarantee is based upon a banking procedure called ‘due diligence’ in the processing of the loan. Due diligence creates the ‘public good’ in banking as well as the private good of credit. The ‘public good’ of banking lies in the bank’s guaranteeing of the credit-worthiness of the borrower. Since ‘accepting and guaranteeing’ a debt is the fundamental act of banking, a particular bank’s integrity is its competitive advantage, in the market place of finance. A financial system can break down because of bad behavior of bankers, acting without integrity and committing financial fraud. Financial systems without integrity are crooked and can distort, even destroy, an economic system — plunging a society into depression. This connection between prudent integrity and bank panics and economic depression as has long been emphasized in the economics literature, beginning with Irving Fisher (Fisher, 1933) and later by Hyman Minsky (Minsky, 1982).

In the Libor event, the questions about the ‘how-who-why’ were important to answer, in order to understand how ‘market failure’ is empirically possible in self-organizing financial markets. In this case, one can see that full explanation of a historical economic event requires a contextually-dependent theory, with context describable in an ‘Individual-Society’ dichotomy. Contextually-dependent theory must explain how economic agents can behave ‘rationally’ but also ‘irrationally’. Rational economic behavior should be for both private good and public good (such as price equilibriums in competitive markets). But irrational economic behavior can be only for a private good and not a public good (such as financial fraud). Behavior which is economically ‘rational’ (private good) but ‘improper’ (not public good) occurs when banking officials commit financial fraud. Thus contextually-dependent economic theory must explain not only ‘rational’ private economic behavior but also ‘proper’ private economic

behavior. As we have seen in the Libor case, a principle issue of control of economic systems in a modern society is this. *How can a self-organizing society limit abuses of its socio-technical systems (such as its economic system), through corruption by individuals?*

Corruption of a *Society's* societal systems is always by *Individuals*. Some individuals in authority can corrupt a system, acting alone, or in groups, or in conspiracy. In analyzing the case of Libor, one can see that some of the explanatory relations are particularly important to limit individuals' abuses of the system: (15) *System*, (2) *Principles*, (3) *Institutionalization*, (9) *Regulating*, (1) *Ethics*. These are highlighted in (Figure 7).

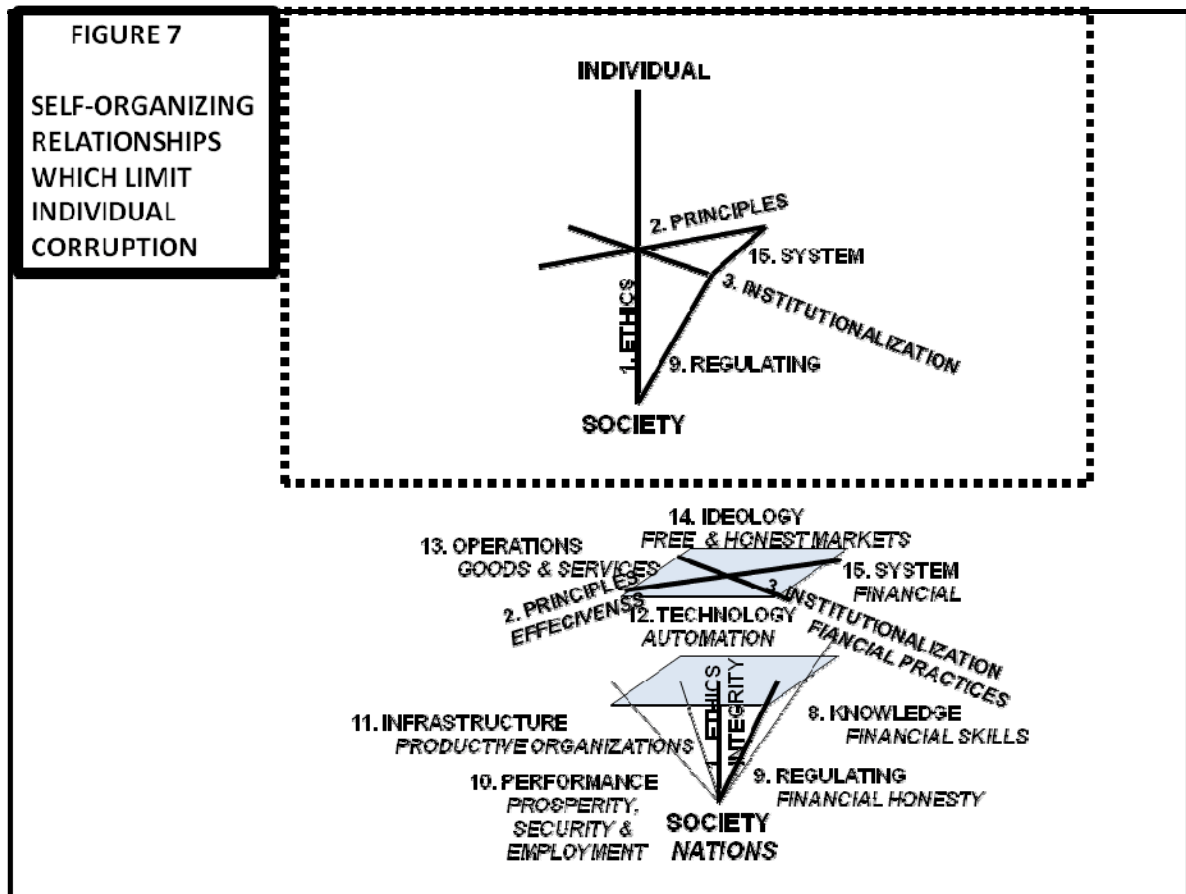


Figure 7. Self-Organizing Relationships Which Limit Individual Corruption

The *Individuals* involved in the Libor case were traders employed in banks, CEOs of the banks, and Gary Gensler, head of the U.S. Commodities Futures Trading Commission (CFTC).

A (15) *System* is the kind of socio-technical system important to the functioning of a society. In the case of Libor, the system was the financial system of the world, using standardized interest rates for loans.

The (1) *Ethics* of the socio-technical system expresses the ‘virtue’ of the operations of the system. In the case of Libor, the ethics of bankers and traders should have been in the ‘integrity’ of their honest reporting of interbank-loans interest rates. Instead the ethics of some traders were to cheat (while their



CEOs saw no evil). In contrast Mr. Gensler's ethics was to enforce honest ethical behavior in the banks and its employers.

The (9) *Regulating* of a socio-technical system should consist of overseeing and enforcing rules of the operations of an economic system — for honest, safety, and stability. In the case of Libor, the trading operations involving financial derivative contracts had been unregulated. In 2009 with U.S. government's passage of the Dodd-Frank Act, a new regulation of the U.S. derivatives market was assigned to the Commodities Futures Trading Commission (CFTC); and its head, Gary Gensler, began investigating the honesty of the Libor interest rate index.

The (2) *Principles* for the socio-technical system expresses the rules for proper functioning of the system. In the case of Libor, the principles should have consisted of good banking principles, providing capital loans for effective production in an economy. Instead, banks were engaging mainly in trading to generate profits. Then unethical bank traders cheated daily on the setting of the standard rate — in order to profit upon derivative trades influenced by the rate.

The (3) *Institutionalization* of the social-technical system should provide the practices for effective operations in the function. In the case of Libor, the practices were intended to be overseen by the private British Bankers' Association, but instead the Association failed to do any proper oversight of Libor.

In a self-regulating society, the ethics of individuals acting in directly-managed organization are constrained (or not constrained) by proper *Ethics, Principles, Institutionalization, and Regulating*. Without such proper constraint, greedy individuals (through irresponsibility or fraud or corruption) abuse the socio-technical systems of a self-organizing society.

Financial markets are not necessarily empirically perfect; but require proper regulation for integrity, in order to actually operate toward the 'ideal' of a perfect market. Even bankers/traders in integrated banks (the banks-too-big-fail) will cheat, motivated by enormous bonus rewards. Bankers/traders too are merely human.

*Economic theory is a subset of societal 'middle-range theories' about how a society empirically operates and should normatively operate. Economic theory, as a 'grand theory' in a stand-alone discipline, never has accurately described empirical history of any societies (e.g. the U.S. Great Depression or the 2007 Global Financial Crisis or the 1963-2003 South Korean economic growth, etc.).*

*Grand theory in any social science discipline requires empirical validation by middle-range theories, upon which grand theory should be constructed.*

*In the 'grand theory' of macro-economic theory (about markets being perfect), a basic 'market failure' which should always be addressed is this — the regulatory condition for 'integrity' in a financial system. Economic 'integrity' is as important as economic 'rationality' in the proper empirical operation of an economic system — in both normative and empirical theory. Neither concepts of 'economic rationality' and 'economic integrity' can be accurately and empirically described within economic*

*theory alone — but require a cross-disciplinary social science framework for explanation in real societal events.*

*The economic system is a sub-set of societal systems. Other societal sub-systems (such as political, cultural, knowledge subsystems) provide the context for any economic sub-system. A scientific analysis of institutional processes about ‘corruption’ in any society needs a full social sciences approach – a cross-disciplinary methodology.*

*Both societal structure and particular individuals influence how any societal sub-system operates in any particular society and at any particular time. History is the empirical basis of mid-range social science theory.*

As a footnote, on March 14, 2014, further steps in the Libor event were continuing to unfold: “The Federal Deposit Insurance Corporation has sued 16 big banks that set a crucial global interest rate, accusing them of fraud and conspiring to keep the rate low to enrich themselves. The banks, which include Bank of America, Citigroup and JPMorgan Chase in the United States, are among the world’s largest. The F.D.I.C. said it sought to recover losses that the rate manipulation caused to 10 United States banks that failed during the financial crisis and were taken over by the agency. The lawsuit was filed on Friday (March 14, 2014) in Federal District Court in Manhattan. The banks are accused of rigging the London interbank offered rate, known as Libor, from August 2007 to at least mid-2011. The F.D.I.C. also sued a trade group, the British Bankers’ Association, that helped set Libor.” (Associated Press, 2014)

Perhaps it would have been more worthwhile, for the public good in financial systems, for the fraud to have been prevented, rather than sued afterwards. But without valid social science theory, how can societal abuses be foreseen and controlled — prevented?

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