WHAT'S NEXT?

The Demise of Capitalism and The Outline of a Proposal for an Alternative Socio-economic System

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PREFACE

1. Capitalism is systemically faulty and increasingly dangerous in its present form(s) (see Appendix I and Burns and DeVille, 2007; Burns et al, 2016). It emerged and evolved historically in a piecemeal manner as a function of multiple agents and processes (including socio-cultural and political selective mechanisms influencing its evolution). It has proved itself to be a highly effective production system ("machine" or "social algorithm"), one that also supports many powerful agents as well as produces new powerful agents, for instance, those associated with emergent major technological developments (in the past, for instance, railroad systems, automobile systems, chemicals and pharmaceuticals as well as more recently IT systems).

It is very flawed dydtm, in part because of it complex history of piecemeal faulty construction, in part because of powerful interests who support general ignorance about it and cover up successfully many of its faulty, even dangerous structures and processes – dangerous to human populations and to the environment; they also use their positions of power and authority to deflect or block re-design, re-form proposals and initiatives (Burns, Martinelli, and DeVille, 2016??).

2. Our point of departure is the general idea that a social systemic perspective is essential to effectively describing, analyzing, and judging capitalism as a complex socio-economic system and proposing alternative designs or models (see Appendix).

The aim is not only to effectively describe and analyze contemporary capitalism, its agents, its institutions, its dynamics and development patterns (see Appendix) but to investigate and propose radical reforms – articulating a substantially new and different socio-economic system (presented in the following text). Concerning reform or transformation, the aim is to find a viable democratically based alternative to capitalism for the purpose of realizing people's welfare, economic productive effectiveness, social justice, and ecological sustainability (one might think of a rubric like "democratic sustainability capitalism" or "the new capitalism" but it is not a capitalism because, rather than revolving around "capital", the alternative socio-economic system revolves around multiple stakeholder groups and welfare, environmental sustainability, and effective management and regulation).

The paper proposes a radically new socio-economic and societal framework consisting of multiple interrelated subsystems based on innovations and transformations of key socio-economic concepts, institutional arrangements, and practices (in some cases, relatively tested subsystems (institutional subsystems):

- Changes in property rights, ownership rules, and institutions
- Changes corporate arrangements; in particular changes in relation to financial stakeholders as well as a number of other stakeholders (employees, government, local community or communities, environmental and social NGOs)
- Changes in the roles and orientations of managers and their corporate practices
- Changes in money and the financial subsystem

- New accounting systems: corporate, organizational,
- Changes in governance and regulatory systems relating to socio-economic subsystems including markets and finance and banks
- Changes in hegemonic cultural concepts and narratives concerning socio-economics, among other things, welfare, distributive justice, sustainability
- Related changes in research and educational subsystems

All of this is for the multiple purposes of realizing people's welfare, production effectivenrdd, social justice, and ecological sustainability. Such an alternative is not some sort of hyphenated "capitalism;" Rather than revolving around capital and current money systems generally, this alternative revolves around multiple stakeholders and human welfare, ecological sustainability, effective regulation abd management of complex dynamic systems, business enterprises, markets, educational and research systems as well as other public services.

The key to developing a viable alternative to capitalism is to establish a new normative and legal order as well as regulatory system. Such a system entails **restructuring existing institutional arrangements and systemic powers, that is "social structure" and multiple functions** (functional relations like money, or corporate management and decision-making). To bring about such changes requires **meta-power**—the power to structure and restructure systems (Burns and Hall, 2013; Buckley et al, 1976). Who are the agents that are likely to be convinced and mobilized to support such an alternative system: in all likelihood, they will come from the ranks of managers & engineers, employees everywhere (but , not especially industrial workers or their unions who stand often enough in opposition to ecological projects and regulation), many professional regulators, economists and other social scientists, educators, mass media folks.

Transformation of the Pillars of Capitalism, a Strategic Reform in the Sustainability Revolution: The Perspective of Actor-System-Dynamics

1. Introduction

Sustainable development will have to be sustainable economically in the globalized world. Economic institutions and their supporting arrangements (cultural, governance, and material) need to be critically reviewed and realigned from a sustainable and social justive development perspective. This will entail making production, distribution, and consumption much more transparent as a basis for accountability and re-alignment. For instance, many environmental effects are redistributed via the world market mechanism (international trade and investment). These effects have to be made more visible, better known, and re-aligned appropriately. Ultimately, the rules of international trade (e.g. World Trade Organization (WTO) rules, petroleum price regulation, etc.) will have to be rewritten to take into account in a fundamental and systematic way ecological as well as social justice considerations. This will be, of course, a difficult, painful process. There is bound to be a formidable mobilization of economic and political powers as well as scientific authority to oppose this. Paradoxically, as has been observed, one of the unintended consequences of financial recessions at the beginning of the 21st century can make for opportunities to "civilize" capitalism. This would entail, among other things, substantial institutional redesign and global policy changes, reducing, for instance, world market forces and competition and insecurity (as George Soros and others have argued). An earth-friendly capitalism requires, we would argue, substantial changes in the rights to maximize economic gain. In other words, those rights which typically allow for the disregard of many significant non-monetary consequences will have to be rewritten. The irresponsibility of much contemporary capitalism would have to be replaced with constrained powers; the latter formulated in terms of more limited rights as well as of increased responsibility with respect to the physical environment as well as social and welfare conditions. While conventional, "capitalist freedoms" would have to be greatly reduced, new freedoms and incentives would need to be established in areas related to green technological innovation.

Corporate planning and determination of enterprise innovations and developments would be required to march to the tune of a sustainability piper. Here we have in mind decisions and practices relating to the production and use of energy and other natural resources, chemicals, transport systems including private transportation, chemically intensive farming, waste production, technological innovation and development, etc. In general, key dimensions of economic activity would require to a greater or lesser extent some form of "societal regulation" which would aim at sustainability and social justice as well as economic viability.

2. Transforming Major Subsystems of Capitalism: Starting with Stakeholder Corporate Model

Key pillars of contemporary capitalism such as corporate structures, management practices, and accounting systems, as well as property arrangements must be radically reformed in order to achieve a sustainable economy. One promising form of a reformed capitalist project is "stakeholder capitalism"(Bogle 2005).[1] The stakeholder model conceptualizes business enterprise as operating in a nexus of multiple interests which enterprise decision-making and development would be required to take into account (as currently occurs to some extent but not to a sufficient extent): employees, the suppliers, customers, shareholders, the state, local communities, environmentalists, and the larger society generally – the so-called *stakeholders.* In this model, the managers are key agents for resolving conflicts and finding strategies of enterprise development that satisfy a spectrum of interests/stakeholders. Stakeholders would participate in institutionalized and effective ways, discussing and influencing corporate managers' planning and decision-making. In such a stakeholder framework, boards of directors and managers would take on a much broader set of responsibilities beyond simply pursuing profitability and the value of company stock.[2] Such a system would be more capable than present models of aligning its institutional arrangements with emerging shared values about sustainability and social justice.

In the past, systematic regulation has been essential to an effective and relatively stable capitalism (e.g. Burns and DeVille, 2006; Burns et al. 2002). Our analyses indicate that even some forms of regulated capitalism can be made more compatible with long-term ecological and social sustainability than others. In the universe of management thinking and strategizing, the imperative of profit should be accompanied by a complex spectrum of other imperatives; matters of sustainability, corporate and societal responsibility, reduction of poverty, and more equitable distribution of wealth. ***Key elements in any redesign would entail reforms of financial institutions, accounting systems and the roles of corporate management and its relationships to stakeholders*** (see Figure 1)***.***

[1] The notion of a stakeholder model, which is increasingly taken up in current discourses, has a relatively long history**.** In the late 1960s, the Swedish economist Eric Rhenman (Rhenman, 1968), among others, formulated such a model, and it was used in the research and consulting activity of his consulting firm, the Scandinavian Institute of Administrative Research (SIAR). His work and others in this period were seen as part of a general movement to humanise and decommodify work and production.

[2] Brown (1981:322-323) stresses the *power and ultimate responsibility* of large business enterprises**.** Many multi-national corporations represent concentrations of power that rival those of the weaker nation states. And such power brings with it responsibility. Quoting Willis Harman of the Stanford Research Institute, he writes: "As the largest corporations begin to wield influences over human lives that are comparable to those of governments, they face a demand that has historically been made only of government – that they assume responsibility for the welfare of those over whom they wield power."

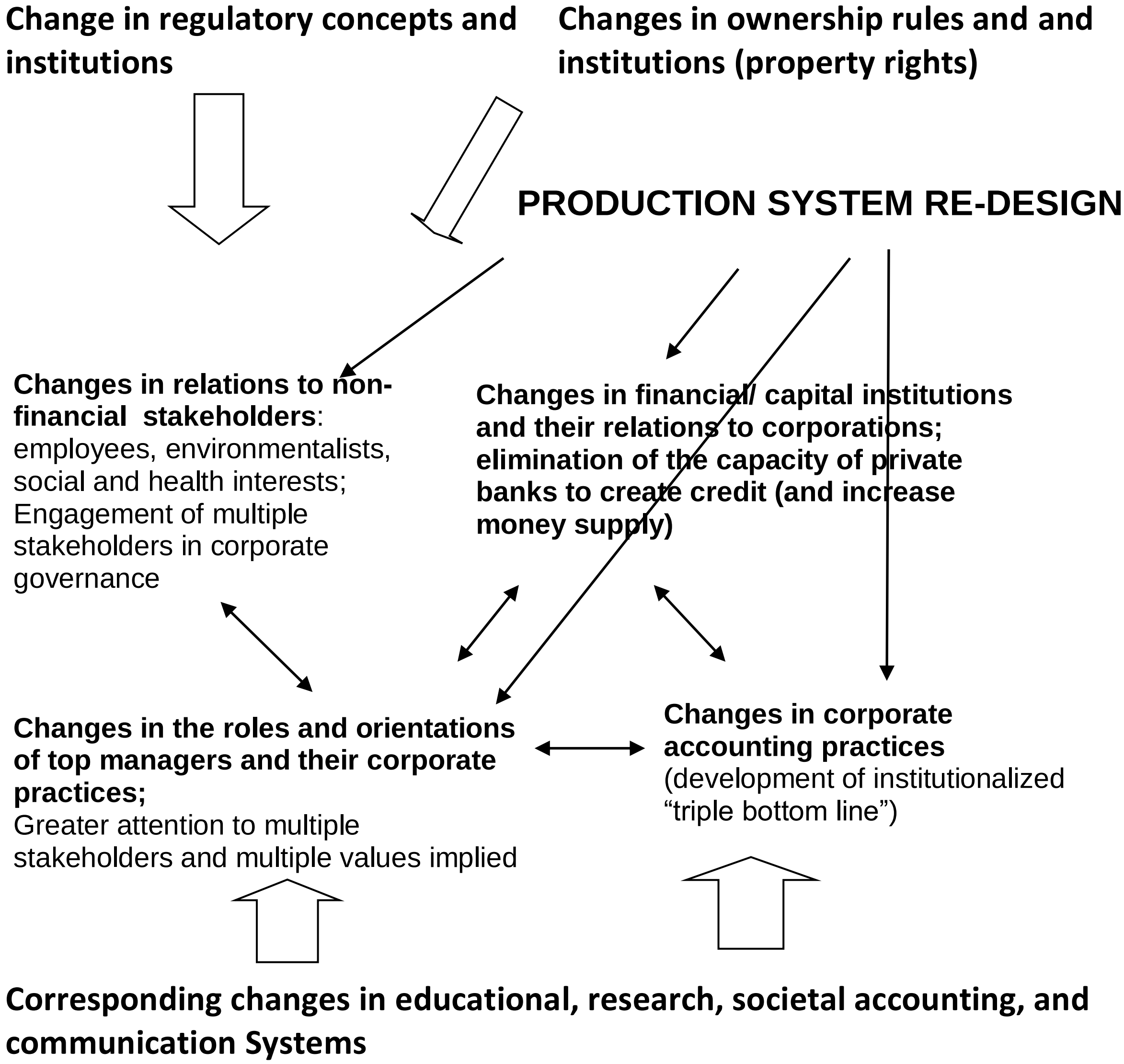

Figure 1: Redesigning Four Economic Pillars to Establish "Stakeholder Capitalism"

This version of "**stakeholder capitalism**" is a counterpoint to "money (**finance/commercial/manufacturing) capitalism**." On an informal level today, many corporate interests accept the engagement of "stakeholders", and invite them on a regular basis into corporate discussions and deliberations about the introduction of new technologies and new products, and dealing with environmental and health issues, among others. What is at stake ultimately is the effective institutionalization of such procedures. ***This means bringing different categories of stakeholder into corporate governance and the deliberations on policy, strategy, and investments***. Of course, which stakeholders are to be represented, how they would be selected, what role(s) they would play, still remains to be spelled out (and would entail a number of contentious issues), for instance, the rules of selection of stakeholders and their participation in deliberation and decision-making. Experiments with such arrangements have been going on for some time in the Scandinavian context but also in other parts of Europe as well as in North America. Much can be learned from these experiments, their successes as well as their failures.

"Stakeholder capitalism" involves the reduction of the dependence of companies on international financial markets, and therefore the reduction of the *liquidity of financial transactions*. The exaggerated emphasis on "shareholder value" would be reduced institutionally – as the major driver of business activity. This is achievable not only through taxation and direct legal constraints but particularly through changing corporate power relationships, in part by bringing stakeholders formally into the governance structures and, in part, through accountability and accounting reforms.

Needless to say, a "stakeholder reform or democratization of the firm" implies a major reconceptualization and restructuring of property regimes and greater attention to obligations and constraints with respect to the uses and products of property. This may be achieved not only through imposition of legal constraints, but by the institutionalization of new accounting systems (e. g. "the triple bottom line") which extend beyond financial results, encompassing social and environmental considerations.

Furthermore, the transition to a stakeholder reformed capitalism involves redesigning incentive structures for top management, for instance, treating the corporate social responsibility (CSR) not just as a moral spice adding respectability to a capitalist enterprise, but a genuine reform movement and moral and material pressure. The new incentive structures should re-orient management away from a preoccupation (often an "obsession" under present conditions) with the value of corporate stocks and *stockholders* interests and toward much greater emphasis stakeholder considerations and their ecological and social values. Managerial performance and merit would be consistently assessed and rewarded according to multidimensional criteria involving not only profitability, but the health and welfare conditions of employees, reductions in pollutants and wastes, and the development of ecologically improved production methods and products. This would entail of course a transformation of management education and training as well as management roles and performance assessments. Above all, there would be greater autonomy from financial structures and greater engagement with multiple conflicting values and demands as well as the complex negotiation processes that this more complex world of legitimate interests implies.

To recap our argument: ***New institutional designs and forms of regulation are needed to reshape current capitalist arrangements and mechanism. These include, for instance, stakeholder models that, by contrast with financial capitalism, would be much more compatible with social and ecological requisites*** (Bogle 2005). In a stakeholder type of capitalism, the following principles would be observed:

(1) The multiple interests and aspirations of employees, communities, customers, and suppliers, environmentalists, etc – "the stakeholders of the company" – are taken into account, in part through legally binding representation and participation in corporate structures such as the Board of Directors.
(2) The Boards of Directors have thus a much broader set of responsibilities, that is, beyond simply profitability, the value of the stocks or fiscal obligation (taxation)
(3) In addition to far-reaching system re-design, incentive structures and accounting systems would be re-aligned to reflect the objectives of sustainable development.
(4) The new incentives structures and normative pressures would be oriented to values and conditions other than maximizing profitability and shareholder value in pursuing corporate decisions and determining policy

Is such a new paradigm for capitalism possible? The answer is well worth exploring. There are already many promising improvements and developments in this direction.

Economic investment, innovation, and growth start being redirected, above all to bring about technological adaptation and innovation for the aims of sustainable development. Many businesses have seen opportunities in making such sustainability innovations in production, distribution, and products as well as in accounting systems and principles of managerial responsibility. The appropriate technological development for sustainability would, however, require novel forms of governance intervention designed to facilitate or to encourage green innovation and development of appropriately ecological and social forms of technologies as well as products for sustainable production. Whether these governance mechanisms would be organized and implemented through stakeholder capitalism, business associations, NGOs, state agencies, inter-governmental organizations, or new combinations of these remains to be worked out.

3. Beyond Government: Supporting new systems and strategies of governance and regulation

The above indicates that earth-friendly governments will do relatively little. Their actions will be symbolic. They will, of course, support powerful interests which claim that they are prepared to act effectively. But one cannot expect much from political leaders who are extremely cautious not to alienate powerful economic and media interests, on the one hand, and their constituencies, on the other hand, through radical actions which undermine the economy, welfare, and lifestyles. Fortunately, there is already an emerging global trend manifested in *thousands* of sustainability governance structures and mechanisms, NGOs, and local and transnational activist groups as well as expert networks.[3] Some of them are confrontational, but quite a significant number frollows the idea and ethos fo partnership in their agendas. Their growing importance today indicates that governance is a broader and more promising concept than government, though it does not replace it. ***Governance refers to a complex of social steering processes (public as well as private) where competencies are shared among multiple actors, public as well as private (local, national, and international); it results in changes in activities, outcomes, and developments – in particular, rule-making, implementation, and institutional innovation relating to sustainability issues and strategies.*** The actors participating in modern governance are not only "political" agents (parties, states, international government organs), but a whole spectrum of civil society: economic interests (private companies, business alliances and associations), representatives of community associations, NGOs, groups and associations of scientists and other experts, etc. This represents new modes of regulation as well as a new form of "organic democracy" (Burns, 1999; Burns et al, 2000).

The "era of governance"has been necessitated by the emergence of entirely a complex hybrid forms of coordination and regulation in contemporary society. Public-private boundaries have become blurred where business interests, as well as NGOs, have become intimately involved with government actions (and in some cases are more important than government agents). [4] The era of governance is also signaled by Considerable power and sovereignty shifting upwards to supra-national bodies,[5] downwards to regional and local levels and outwards to multiple agents in civil society. In short

[3] These networks include not only natural, technical, and medical scientists but social scientists as well as scholars in the humanities.

[4] While "organizational citizens" and the new politics of organic democracy (Burns, 1999; Burns et al, 2000, among others) are part and parcel of a major transformation of contemporary "democratic politics", there are a number of drawbacks, among others, the complexity and lack of transparency, the fact that many peripheral and disempowered groups have little or no opportunity to participate in current efforts of, among other things, environmental governance (Lemos and Agrawal, 2006:16). Indeed, Ford (cited in Lemos and Agrawalk, 2006) argued that Brundtland failed to address power issues, for instance, the awesome powers of capitalism.

[5] Lemost and Agrawal (2003:23) point out, "One can distinguish several dimensions concerning the *essence of international governance as it relates to ecological and sustainability issues*. What is it that *de facto* governs

state and state-centric forms are no longer the only and the most important forms of rule-formation, policymaking, and regulation in a number of areas. **Environmental governance** concerns, of course, environmentally significant rule-making, policy strategies, and interventions aimed at changing enviornment-related incentives, knowledge, institutions, decision-making and behavior (cf Lemos and Agrawal, 2006). It signifies a wide set of regulatory processes, not just international governance mechanisms and their impacts at the international level or just the state and its agencies at the national and subnational levels. Lemos and Agrawal (2006:322) *highlight the hybrid, multi-level and cross-sectoral nature of emerging forms of governance*. The shift since the 1960s has seen the engagement of specific change agents such as market actors, NGOs, communities and local institutions, as well as state agents as key actors advocating effective environmental protection and management. In the past 15 years especially, the authors point out that a number of new sets of instruments of environmental governance have emerged. They identify, in particular, three ***emergent forms of cooperative governance***: (1) co-management as the form of collaboration between state agencies and communities; (2) public-private partnerships between market actors and state agencies; and (3) social-private partnerships between market actors and communities. There are others as well: ***partnerships*** between business firms and NGOs, between state agencies and NGOs, and more complex associations engaging a diversity of types of societal actors. In general, we are witnessing a profusion of partnership forms and activities when it comes to addressing environmental problems and issues.

Emerging forms of environmental governance rely, on the one hand, on partnerships and, on the other hand, on the mobilization of individual incentives characteristic of market-based instruments (and "win-win" type conditions) to accomplish environmental regulation. Since the aim is to gain the willing participation of a range of actors who would subject themselves to regulatory mechanisms, they are viewed by many as being amenable to more efficient implementation. However, the fact that human interventions in ecosystem processes are already leading to unsustainable use of a major part of the ecosystem implies that, together with increased efficiency, ***it is equally necessary to work toward systematic restraint on the human use of major ecosystems***. Effective environmental governance requires, then, the incorporation of knowledge about limits on aggregate levels of human activities that depend on high intensities of resource exploitation or lead to high levels of pollutant emissions. In designing and assessing strategies of environmental governance, it is critical therefore to focus not just on efficiency and equity, but also on defining limits of exploitation and developing sustainable alternatives (Lemost and Agrawal, 2003:23).

As a social trend and as a political project, the establishment of effective earth system governance represents a challenge. Some degree, level, or type of nation-state as well as extra-state intervention will be necessary to encourage (or to compel) actors to change their present behaviors and to act in more sustainable ways.[6] States and regional bodies such as the EU have a major role to play,

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international behavior? *One important line of thought emphasizes the influence of norms and institutions and introduces the concept of international regimes* "as sets of implicit or explicit principles, norms, rules, and decision-making procedures around which actors' expectations converge in a given area of international relations". The point here is that the international arena does not have the same discretionary powers as the national regulatory context. Supposedly, international collaborative efforts are then, both for their initiation and subsequent implementation, to a larger extent built on voluntary and negotiated means. Moreover, ***cognitive and cultural aspects are likely to have a major impact.*** More importantly, though, the notion of regimes suggests that international governance *de facto* can take place in a more or less formalized way. Also, it is an empirical question as to what extent a written agreement is a more efficient instrument for governance than a looser regime."

[6] Of course, corporate power is likely to be mobilized to resist some sustainability initiatives. There are many historical examples of a part of the corporate sector mobilizing its power to pursue its interests and, thereby, to impact negatively on many ecological as well as social conditions. This is pointed up by Stanley I. Fischler's study (*Moving Millions: An Inside Look at Mass Transit*, Harper and Row, New York, 1979) of the systematic dismantling of U.S. urban streetcar systems during the early postwar period under the leadership of General Motors in

not only in taxing or outlawing non-sustainable patterns of production and consumption but also in providing incentive systems including subsidies to encourage more sustainable patterns of decision and action.

On the one hand, we need to continue exploring and developing innovative forms of sustainability governance[7] and new models of "deliberative and reflective democracy" and "association democracy." They can help bring about normative consensus across a diversity of social actors (individual and organizational), publicizing agreement to a wider public, and building all of this into 'normal' forms of thinking, of politics, of everyday life. These initiatives in innovation must be further elaborated and tested in the search for optimal solutions.

4. **Establishing a new system of global environmental sciences including the social sciences and humanities** (see *Amsterdam Declaration*, footnote 4)**.** Such scientific development has already begun to evolve from complementary approaches of the international global change research programmes. These developments need of course further strengthening and elaboration. Drawing on the existing and expanding disciplinary base of global change sciences, we need to develop partnerships across disciplines, across environments and development issues as well as across the natural and social sciences and the humanities. Collaboration across national boundaries is already taking place on a massive scale, but it is highly uneven across the globe. Efforts must be intensified to enable the full involvement of developing country scientists. The complementary strengths of nations, regions, and professions should be mobilized to build an effective international system of global environmental sciences.

The current climate shift and the global economic crisis double the need for strengthening ***the role of the social sciences and the humanities.*** Their insights are essential in developing understandings and strategies of how to redirect and transform society, in particular, its institutions and cultural formations most relevant for accomplishing sustainability. As argued here, shaping and developing a sustainable society will require radical transformations -- that is, a form of socio-cultural revolution -- best realized through gradual or incremental changes and legitimized through democratic means. The social sciences and humanities have a substantial knowledge base about such processes of change and development, the vast potentialities in every society, key constraining and facilitating factors, and also the manifold risks involved in such undertakings.

5. Viewing Society as a crucible of learning; New educational strategies and systems are necessary.[8]
The project of sustainable revolution will never succeed without the accompanying educational effort. The alter-globalist civil initiatives, projects of "green" or "natural" capitalism" or new forms of governance will never succeed without making basic concepts, principles, stories, and strategies a core part of education at all levels and in all countries. This is a complex and challenging process. New

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cooperation with Standard Oil, Firestone, and others who stood to benefit from automobile sales (Brown, 1981). GM formed a jointly owned subsidiary that proceeded to purchase and dismantle privately owned urban rapid-rail transit systems. Fischler quotes Congressional testimony by the San Francisco Mayor Joseph Alioto: "in all, General Motors, acting through subsidafry mass transit companies acquired fourty-six streetcar systems in forty-five cities and converted all to smog-producing bus operations." Los Angeles Mayor Thomas Bradley was no less emphatic: "The destruction of a system in Los Angeles with over one thousand miles of track took place in a very calculated fashion. The fact that a handful of giant corporations determined the form of ground transportation for the country's three largest cities – and for a hundred other cities – should not be easily forgotten..." Thus, ...these companies nourished U.S. dependence on the automobile, which in turn has helped deepen national dependence on petroleum (and its import), which at the same time has had economic as well as geo-political implications.

[7] This is, for example, the theme of the Conference on the Human Dimensions of Global Environmental Change, "Earth System Governance: Theories and Strategies for Sustainability", Amsterdam, May 24-26, 2007.

[8] This sections draws upon a note prepared by Ilan Chabay for the Oslo Sustainability Initiative.

educational nstitutions, programs, and courses need experienced teachers, and a holistic, interdisciplinary mindset. Such midset exists only in theory. In reality, schools and universities, teach knowledge which comes in silos and chimneys, In Norway, a country which boasts to be a cutting edge of environmental thought, teachers flee from sustainable education. They do it for two reasons. Firstly, because sustainability has been largely mediated through a dead, technocratic language of policy documents. Secondly, because it requires an interdisciplinary competence and imaginative flair which few can muster. . Even if we assume that in some communities there are after-school activity centers filled with informed idealists who are able to engage both parents and children in issues and initiatives for sustainability, the teachers are more often than not treated as oddballs and the education as a drag about recycling.[9] In order to succeed, we would have both to return to and rework the Renaissance idea of the *paideia*: a holistic humanist education which would comprise new insights into the interconnectedness of things in modern societies

It also demands that modern developed societies – which have to take the lead in this process- **broaden conventional conceptions of learning and education**. Contemporary social science and the humanities show us that "learning" and "education" are processes which are not confined to schools; they are mediated by mass media, by everyday exchanges and discussions among people, by expressions of religious leaders, the heritage industry, and the arts. There is also an open cultural space for sustainable education in film-making, theatre performances, literature, music, dance, and the WorldWideWeb.. Science centers, museums, zoos, and aquaria, all of which have informal learning agendas, are exciting venues for dialogues and presentations of the sustainability story.[10] They have personnel who often are experienced and adept at engaging the public in dialogues. These institutions are typically part of large networks or infrastructures, both at the local and global level, and can increase the efficiency of outreach initiatives . It goes without saying that the mass media – as the "fourth power" (in addition to corporate,governmental, and religious powers) – is a key part of societal learning and education. Al Gore's documentary, "An Inconvenient Truth" has undoubtedly helped many people visualize concretely what is happening with respect to global warming – thousands of miles away from their homes and workplaces. Recent films from Hollywood dramatising changing weather patterns and increased destructiveness of, for example, hurricanes, play a role in raising people's consciousness about environmental scenarios.There is also the new media, the web, the increasing use of sites and blogs, which provide opportunities for new kinds of learning and education as well as engagement in sustainable initiatives. .

Some individuals and organizations have been quick to exploit these opportunities. NGOs, make use of the old media (TV, radio, and newspapers) as well as the new IC media; in the latter case they do this through their provocative websites, their posting of monitoring reports on corporate, government, and community misbehaviour. These influential agents of civil society are not simply lobbying or pressure groups but major forces in the process of raising consciousness, educating, and mobilizing people to push for change, whether this takes place on the local level (for instance, struggling against local hazardous waste dumping or the use of dangerous herbicides and pesticides), the government

[9] See for example, the exeperiences of Global Action Plan (GAP) in Poland.

[10]For instance, three science centers that have addressed aspects of global sustainability - largely climate change - with exhibitions and other media are the Exploratorium in San Francisco, Science North in Sudbury, Ontario, Canada, and the Marian Koshland Science Museum in Washington, DC. The Exploratorium (www.exploratorium.edu) has produced a number of webcasts on related topics, which have been seen by individuals all over the world, as well as featured in many other science centers. Science North (www.sciencenorth.on.ca) has produced a traveling multimedia exhibit entitled, "The Climate Change Show." A set of permanent exhibits are featured at the Koshland Museum (www.kosland-science-museum.org) focusing on climate change. The Koshland museum also hosts well-publicized symposia for the community on the same issues.

level (such as pointing out that existing environmental laws and policies are not being enforced), or on the global level (for example, challenging multi-national corporate policies and interests).

Education about sustainability in the broad sense - as a new paideia – would ideally be operative if it comprised all levels of society, including: power-holders and power-brokers, policy makers, business leaders, community leaders, representatives of NGOs, academics, and citizen.[11] Such an approach involves working out multiple strategies and methods for making sustainability interesting, important, alive and vital to the twenty first century.

6.. **Sustainable development needs to be expressed in new powerful narratives as mobilizing stories** (Witoszek, 2006).[12] One of the underestimated obstacles to sustainable development is the narrative or mythical deficit. A major problem with sustainability is its lack of a compelling "narrative" or image.[13] Many if not most people are put off by the penitential stories of asceticism, constraint, sobriety, temperance, astringency (although "recycling" has a positive ring for many). The brutal fact is that we lack compelling narratives of
sustainability capable of capturing the imagination of the public, of rich and poor alike, of peoples of different ethnic groups and religions, of different parts of world.

A major characteristic of modern society is that hegemonic narratives/discourses eulogize values and lifestyles that are to a greater or lesser extent non-sustainable. On this "unsustainable side", forceful narratives such as "the good life", "the American Dream", the "rags to riches story," "abundance," "extravagance," "conspicuous consumption," "excess" – nourish people's imagination, appealing to myths of self-indulgence, hedonist liberation, transgression. (Witoszek, 2006). And, at the level of institutional leadership and policymaking, we find an obsession with "more is better," "growth mania", (economic) "development," etc. This characterization applies not only to contemporary, advanced societies but also to most developing countries.

The challenge is a daunting one.[14] In the highly seductive world of consumer capitalism, there is a multitude of communicative and learning mechanisms serving to peddle the opposites of constraint and conservation and constraint, rather visions of "freedom" (the freedom to waste, among other things) and "happiness" and "pleasure". These messages work; they engage and even enchant most people. Advertising is of course part of the story here (it is a potent factor, especially when combined with the practice of engaging celebrities with whom many people identify and imitate). Journals, books, TV and other media also play their strategic parts. And neighbors, people at work, and associations practice and elaborate affluent lifestyles.

Through open and "free" communication new and highly vibrant "needs" are formed; some of them are satisfied through "shopping" and new forms of consumption, the others are

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[11] It is well to keep in mind that in most institutional settings (corporate structures, government agencies, professional communities, mass media networks), many stakeholders are not represented or not equally represented in "public participation" and in the dialogues and deliberative (alternatively governance) processes. It is important not only from an ethical perspective, but also from a practical perspective to reach people who play different roles in society, that we identify even those stakeholders who do not yet see themselves as such.

[12] Witoszek (2006) stresses that it is often overlooked that the most fascinating, compelling narratives that have nourished human imagination since the time immemorial have to do with profusion and abundance (cf Adam and Eve, Dr. Faustus, carpe diem, King Midas, soap opera versions of the American Dream watched all over the world). People at large are drawn to the myths of transgression, irreverence, and the hedonist greatness and glory in the same way they are NOT drawn to the penitential story of conservation and restraint.

[13] A powerful image like "folkhem" (the "people's home" as welfare in Scandinavia") is an example of a metaphor which took on a life of its own.

[14]Educational institutions are typically highly conservative – resistent to innovation and change. Although they are also the context for highly innovative agents and their demands. This contradiction makes them particularly interesting institutions.

promising a sense of “power”, "freedom", or “happiness”— or all of these. Indeed, the pursuit of “happiness” is understood by many as the freedom to buy ever new and exciting goods. This is part of a comprehensive life style resting on a ***deep-rooted value complex*** – which powerful institutions play a role in maintaining and elaborating.[15] This is just to note that the consumption society in its postmodern version is not necessarily “materialistic” in the conventional sense. There are many practices which are central to contemporary capitalism for instance, "hyper-consumption" and “compulsive shopping”, which spring non-material needs such as high personal anxiety, lack of confidence, stress, loneliness, the search for self-definition..

There are, of course, counter-narratives and counter-narrators (including those relating to environmental and conservation policies), that point to emerging values and practices consistent with principles of sustainability, conservation, recycling, and economizing.. Among theoe “sustainability discourses”, there are ”everyday life stories” which teach about earth-friendly lifestyles, as well as new narratives of business practicesbased on the discourses about corporate social responsibility and business ethics as well as environmental ethics generally.[16] The questios are: how to make these narratives captivating for electorates and, especially, for young generations? How to prevent CSR from being a glorious story fronted in corporate agendas and reports - and hiding dirty deeds? And finally, how to overcome the hegemony ofthe story that growth is good and that to consume is to fulfil one’s patriotic duty in the times of global financial crisis? There is a need for a cultural struggle – a new Kulturkampf - which starts with new stories and heroes – and which would bepowerful enough to challenge The American Dream.

7. An Agenda for Critically Re-thinking Contemporary Capitalism and Designing/Formulating a Viable Alternative

ASD enables the identification of key subsystems that must be reoriented and restructured. We have focused here on the re-orientation and transformation of capitalist corporate structures into a “stakeholder” system model. In Appendix A, we consider also faults and the necessary transformation of money and banking.[17]

[15] The cultural conceptions and patterns of material life are not simply floating in the air. We find powerful institutions producing influential narratives and discourses, encouraging hyper-consumption, the pursuit of endless material needs at the same time promising the participants happiness, status, and power. The institutional arrangements consist of vast systems of advertisement, consumer incentive structures, systems of easy credit, and consumerism in general. This complex in turn sustains and elaborates many of the narratives and images of hyper-consumption, extravagance, non-sustainable lifestyles which characterise our modern, "successful" societies. In general, key modern value complexes undergird consumer drives and gluttony. At the same time, much consumer pleasure is illusory. Many new acquisitions lead to saturation and to frustration and the desire for further acquisition, in an endless cycle.

[16] Unfortunately, these stories and their guidelines are offset or countered by powerful institutionalized incentive structures and established patterns of life which work against the emerging values and norms. Hence, the necessity of institutional re-design and re-alignment.

[17] The ASD research (Burns, Martinelli, and DeVille, 2017) aim to formulate propositions about:
(1) systemic faults in established money and financial systems, in particular the mechanisms that make for boom-and-bust cycles; and (2) the cognitive and action factors which limit the central banks capabilities to consistently and effectively to regulate or to limit these cycles. Drawing on earlier research (our own as well as that of others), this conceptualization identifies a new design and institutional arrangement, which would minimize the boom-and-bust predispositions in money and financial systems. This work builds on earlier research invested in “the Chicago Plan”(from the 1930s) in addition to our own research. The work considers the expected political and ideological constraints on reforming financial systems. Previously operating constraints—including Neo-liberal erosion of New Deal banking arguments and reforms—make for formidable barriers. The research concludes that reform is necessary—if boom-and-bust cycles on the scale of those since 1929 are to be effectively regulated; but it is suggested that such reform is politically and ideologically difficult if not impossible in the short-run.

I. **New value orientations and normative ideas need to be established and spread widely**: what is good or bad? In a new scheme of things, sustainability, human welfare, and distributive justice are "goods," non-sustainability, economic failings, unemployment, etc. are "bads". Cooperation, partnership, proper normative and legal regulation –and reforming institutions accordingly – are "goods." Escalating conflict, exploitation, and distributive injustice are "bads".

2. **New knowledge production and innovation**: system design, assessment/reform/redesign as a function of practice, learning. Reconceptualization of social economy, its values, institutions, practices, and development tendencies. Revision of the sciences of economics, sociology, political science, law, management and administration. Development of new management knowledge and skills, also regulatory knowledge and skills will have to be oriented to the new Model.

3. New language, values and normative ideas, discourses introduced and articulated, diffused (see below about education and media).

4. **New accounting systems (information and values).** (a) global accounting with regard to key resources, measures of populations, wealth distribution, health, education; (b) enterprise and agency. "Triple bottom line" specifying goal accomplishment, environment impacts, and welfare of employees. Formulas or algorithms for combining results in an ultimate assessment.

5**. Reform of money and banking** (See appendix). Already, the idea of banks with different functions, different "monies", e.g. repository banks providing special services, commercial banks, investment banks [function differentiation and separation].

Investment in development, choices (selection of designs, new technologies, etc.)

6. **Reform of property rights and ownership institutions**: not just rights but also duties, expansion of the concept of "the commons", cooperatives, collectivizing major wealth but not necessarily under "state" control, but civil society agents, foundations.

7. **Reform of production enterprises—management, work conditions and relations, accounting.**

Enterprises are not "persons" but powerful agents with major, diverse impacts on individuals, communities, the environment; they are stakeholders themselves; they require constraints and regulation. Reform of public service production (utilities, schools and education, hospitals, etc.''

8. **Reform of markets to assure effectiveness, high level of trust, lowered levels of deceit and exploitation**.

9. **Reform of education, media, research** (economics, sociology, political science, management, negotiation, law, etc…)

10. Reform of regulatory knowledge and systems (also democracy!). Development of new governance ideas and straregies.

11**. Reform of the regulation of wealth and its distribution; allocation to multiple stakeholders supported by government** measures (equalization policies, subsidies, taxes).

8. Concluding Remarks

As Brown (1981:371; also, see Chambers (2005)) has pointed out, millions of small initiatives can collectively bring forth a society that can endure, that will become sustainable… "At first the changes are slow, but they are cumulative and they can accelerate. Mutually reinforcing trends may move us toward a sustainable society much more quickly than now seems likely....Achieving a sustainable society will not be possible without a massive reordering of priorities, institutions, and daily practices. This in turn depends not only on governments, corporations, and professional bodies but on the concrete actions of individuals and of public interest groups; much of it may come from the bottom rather than from the top." "If we fail, it will not be because we did not know what needed to be done" (Brown, 1981:371). Unlike the Mayans, Easter Islanders, or other unfortunate communities which destroyed the ecology on which they depended,[18] we know much more about our conditions and about what must be done. What we will soon discover about ourselves is whether we have the vision, the will, and the power to do it – in the face of the all-to-usual institutional inertia and powerful vested interests.

Many of the subsystems proposed here – in one form or another – have been tried and tested in the past and have functioned more or less effectively under specifiable conditions. Of course, we have no idea how a large-scale system with many new subsystems will function, even given our considerable knowledge of some alternative sub-systems such as production cooperatives and governance conducted by non-government organizations (NGOs).

Who are the agents that are likely to be convinced and open to mobilization to support such an alternative socio-economic (non-capitalist) system: they are likely to come from the ranks of managers and engineers, employees everywhere (but not necessarily industrial workers or their unions who stand sometimes in opposition to radical economic and ecological projects and regulation, many regulators, economists and other social scientists, educators, many in the mass media. But opponents to such reform – the multiple transformations – can mobilize substantial power to block or derail transformative initiatives.

[18] In the case of Easter Island, the indigenous population developed institutional arrangements and practices that could not be sustained in the Easter Island physical environment – the island was deforested as a result of large-scale sculpture production (driven by competition among clans). Without trees, they could not construct sea-vessels to fish, which was a main source of food. The ecological collapse led eventually to a collapse of the social order and the disappearance of most of the population. There are parallels in the case of the Mayans in the lowlands of Guatemala. They expanded continuously over 17 centuries, beginning about the time of Homer's Greece in 800 B.C.; the population doubled on the average of around 400 years and by A.D. 900 had reached five million with a density comparable to that of the most agriculturally intensive societies of today (Brown, 1981). At its agricultural, cultural, and architectural peak, the Maja civilization suddenly collapsed. Population growth and agricultural technology combined to destroy the agricultural foundations of the society. The area was almost totally deforested by A.D. 250. This deforestation combined with mounting pressure on croplands led to the loss of topsoil and the gradual decline of the land's productivity and the capacity to support the Mayan civilization.

In general, complex feedback loops between societal orders and their environments risk generating forms of destabilizing and nonsustainable developments. Histories of the salination (and declining production) of agricultural land, desertification, deforestation, ozone depletion, global warming, among other negative developments, point to the role of human communities in the destruction of their natural resource bases. Increasingly, we are now threatened with such developments on a global scale.

Toward a New Humanistic Agenda for Sustainability and a new Socio-economic System[19]
Sustainability is about *the human condition* and, therefore, about values and more generally culture.[20] Too often the rhetoric of sustainability stops at the question: how can we change institutions and human behaviour?

Humanity in the extended sense – connected with Hippocrates' age-old "earth, air and places" – has until now had no voice, no leadership, no payroll, no budget, and no army. But first and foremost it lacks a story that makes its common future a common reality, a compelling narrative that locates it in time and place, and that communicates the interdependencies that unite people in a divided world. As we have insisted, a new socio-economic/sustainability system is not just about policy and justice; it is first of all about ethics and aesthetics; in most international sustainability discourse, including the Brundtland sense of belonging and connection to the earth that people often feel is seldom acknowledged, nor are the feelings of kinship and compassion that humans often have with their non-human fellow travellers on Report, there is little if any evocative, prose, little sense of the mystery and wonder of life. The profound this miracle planet. Perhaps it is time to to go back to the pre-modern Renaissance cosmology and re-read Shakespeare as a guide?

While change initiatives (including many 'sustainability' initiatives) grow and spread by the many tens of thousands, the ongoing transformation will be no walkover. This is not a case of ecological modernization; rather, it is a development taking place in the context of established social structures and power configurations (whether capitalist, socialist, or Saudi Arabian and other Middle East oil producing kingdoms, etc.) and the elaborated institutional arrangements of what in many ways has been an historically successful industrialization/modernization paradigm. There is formidable opposition (including deniers of climate change and other environmental hazards as well as believers in technical fixes) among the powerful, for instance, many in the established industrial-commercial-banking complexes and their allies. The struggle is likely to belong and difficult. Particularly troublesome are efforts to deal with climate change, GHG emissions, the mammoth auto and related industries (Dietz and Burns, 1992), the continuing use and sustained extraction (including new forms of extraction) of fossil fuels. Whether the new socio-economic/sustainability revolution will take place fast enough or be comprehensive enough to save the planet and humanity remains to be seen. History provides numerous examples of great societies that collapsed, and visions that failed or were never realized.

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[19] The following is adapted from a core statement about a humanist agenda of the Oslo Sustainability Initiative found in Sörlin, Taylor, and Witoszek (2007).
[20] As Sörlin, Taylor, and Witoszek (2007) point out, there is no humanity without cultures. Yet, there is no entry for "culture" in the index of most economic reports as well as socio-ecological reports such as the Brundtland Report. There are passing references to "valuable native traditions" which, like the rest of the environment, should be protected and fostered. Sustainable development is to be an antidote to "an environmental crisis, a development crisis, an energy crisis" (p. 4). Yet, the concurrent cultural/ethnic, religious and civilizational crisis that has been pulling the world apart receives no attention. The neglect of culture in the Report means that major drivers in contemporary society are missed, for instance, the role of powerful belief systems and myths and narratives, as emphasized here.

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APPENDIX 1: BOOM AND BUST CYCLES IN FINANCIAL MARKETS -- Causes and Cures: Multiple Contradictory Functions of Money and Collective Action Problems[21]

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ABSTRACT
The aim of this conceptualization article is to formulate propositions about: (1) systemic faults in established money and financial systems, in particular the mechanisms that make for boom-and-bust cycles; and (2) the cognitive and action factors which limit the central banks capabilities to consistently and effectively to regulate or to limit these cycles. Drawing on earlier research (our own as well as that of others), this conceptualization is presented in Section 1. Section 2 identifies a new design and institutional arrangement, which would minimize the boom-and-bust

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21 Burns, T.R. (2017) "Boom and Bust Cycles in Financial Markets—Causes and Cures: Multiple Contradictory Functions of Money and Collective Action Problems. *Theoretical Economics Letters*, Vol. 7, 914-928. We are grateful to Helena Flam and Joc Pixley for their comments and suggestions on an earlier version of this article.
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predispositions in money and financial systems. This work builds on earlier research invested in "the Chicago Plan" (from the 1930s) in addition to our own research. Section 3 considers the expected political and ideological constraints on reforming financial systems. Previously operating constraints -- including Neo-liberal erosion of New Deal banking arguments and reforms -- make for formidable barriers. The paper concludes that reform is necessary -- if boom-and-bust cycles on the scale of those since 1929 are to be effectively regulated; but it is suggested that such reform is politically and ideologically difficult if not impossible in the short-run.

Keywords: coordination problems, contradictory functions of money, new designs and institutional arrangements, Chicago Plan, political and ideological constraints,

Introduction

This paper draws on earlier research (our own as well as that of others) on boom and bust cycles in financial markets. Section 1 identifies a few causes of such cycles and explains the limitations of central banks in consistently and effectively dealing with such cycles. Explanation is traced to the contradictory functions of money and the collective action problems of decentralized markets. Section 2, drawing on earlier work including that of "The Chicago Plan", identifies a new system design and institutional arrangement which would minimize boom-and-bust predispositions in money and financial systems. Section 3 focuses on the political and ideological constraints on accomplishing such reform. In the conclusion, we stress the necessity of a new design (either the one sketched here or others), at the same time that any major reform will face substantial ideological institutions and political obstacles. In the meantime, it is argued, one should investigate and analyze new alternative system designs which would overcome the limitations of the established design.

1. Systemic Flaws and the Boom-and-Bust Cycles of "Modern" Money and Financial Systems.

In earlier work we argued that contemporary money and financial systems are systemically flawed -- even with some of the reforms since 2007 such as the Dodd-Frank Act (2010); they are potentially highly unstable, prone, in particular, to repeated occurrences of boom-and-bust cycles (Burns et al, 2013; Burns and DeVille, 2003; DeVille and Burns, 1977; Kindleberger and Aliber, 2005; Minsky, 1977, 1982). The problem has a systemic source -- the institutional condition that enables private, decentralized banks to create and destroy money -- through credit creation and contraction. This takes place without effective coordination of the multiple banking agents in their aggregate creation and destruction of credit/money. The process also tends to be self-amplifying in that the further creation of credit/money results in higher asset values that are the target for credit/money creation, amplifying market demand for these assets and increasing their values. The rise in asset values reinforces the demand for more credit (and other monetary resources); increases in demand stimulates bank readiness to create more credit, potentially increasing their income from the credit/money creation process (unless, of course, there is a crash, which is the way credit booms typically end).

As we have shown in a socio-economic systems model (Burns et al, 2013), the credit facilitated "expansion phase" leads eventually to a critical phase of growing uncertainty and loss of confidence in the sustainability or resilience of the expansion. A wide spectrum of perceptions, indicators, financial sector and policy discourses, evoke a contraction phase -- with stagnation or reduction in asset values as well as declining readiness of market agents to borrow (or inability to borrow due to asset value losses) as well as reduced readiness of banks to create more credit/money or even to sustain the existing high levels of credit. The banks try to reduce their degree of vulnerability, calling in loans and not making credit as readily available as in the expansion phase. During the uncoordinated contraction of credit, asset prices decline because of reduced availability of credit and the attempts to unload the assets that are declining in value. The result is to a greater or lesser extent "a bust" -- often enough with considerable destruction of value and a climate of reduced confidence and even widespread pessimism,

After a contraction phase of greater or lesser duration, market and/or government actors eventually may redefine the situation and initiate a process of expansion, which sooner or later leads to another (excessive) expansion or boom, etc, etc.

Our socio-economic systems research implied the following:

Principle I: Contemporary money and financial systems are systemically unstable as a result of the lack of coordination -- in this case, of the private decentralized money creation and money destruction mechanisms through credit decision-making. Each banking agent decides on the basis of its immediate demand and level of risk-readiness, indications of anticipated asset value increases, and the expectation that credit created will be repaid according to contractual agreements.

The systemic problem is that private, decentralized banks are enabled to create and destroy money -- through making loans, on the one hand, and through retracting or reducing loans, on the other hand -- *without effective coordination of the aggregate macroeconomic and financial consequences for the entire socio-economic system in the aggregate creation and destruction of money*.[25] The process tends to be self-amplifying in that the creation and allocation of money/credit to a sectoral development (housing, or technology development) tends to result in greater asset values, often reinforcing the mobilization of further credit and other financial resources. The self-amplification process is fed by credit demand of debtors or potential debtors and bank credit supply made available during the boom phase. In a word, there is a lack of market coordination in the money creation process.

The self-amplifying process continues until there are indications of potential problems, excessive risks, related discourses, judgments and prognoses of an increasing number of experts (serving in part as a self-fulfilling prophesy (Burns and DeVille, 2003; Burns and Gomolinska, 2001).[26] Uncertainty about the future of gains grows at the end of the expansion phase (just as uncertainty often declines during the initiation of an expansive process). Under potential bubble conditions, as Dudlev (2010: 5) points out: ”Uncertainty means that policymakers can never be sure about the existence, size, or persistence of an

[25] About the time our research on systemic instability of money and financial systems was being presented, there appeared articles by several key persons at the IMF and the Bank of England (Haldane and associates at the "Financial Stability Unit") with parallel conceptualizations of the boom and bust credit cycle (Aikman et al, 2010; Alessander and Haldane, 2009; Benes and Kumhof, 2012). They argued, as we did, that the financial system is inherently and systemically unstable -- even with the various "fixes" dating from the New Deal (through the various destabilizing de-regulations brought about by Ronald Reagan et al); furthermore, the 2010 reforms (e.g., Dodd-Frank Act) while constructive are insufficient. Because of the flaw in the systemic loop (Burns et al, 2013), the system will sooner or later result in crashes; their frequency and depth depending on the stringency of the regulatory system. *That is, there is a systemic flaw in the design of the system.* Even the most stringent fixes of the existing system -- with its not fully controllable loop -- will lead to boom-and-bust cycles. This network of authors have proposed entirely new systems, drawing on, among other sources, the original "Chicago Plan" from the 1930s, which would take credit-creation (money creation) away from private banks and place it in the sole hands of "the sovereign", i.e. the state [The plan was influential, much discussed but only partially influenced the New Deal banking regulatory reforms at the time].

[26] On the eve of the 1907 crisis, however, much of the financial system had enormous leverage—the ratio of debt to equity was 25 to 1 or more—leaving it extremely vulnerable to panic. And the panic came -- under "fire-in-theatre" conditions -- resulting in a major crash.

incipient asset bubble." A "tipping point" is eventually reached. According to Minsky (1977), it is the proportion of marginal agents, that is, "financially frail" or vulnerable debtors, businesses, and banks in the whole population that determines the level of the tipping point, other things being equal. Moreover, according to Minsky, bubbles are less likely to grow large when there is a great deal of vulnerability in the system, which predisposes most agents to be risk-averse and/or un-credit worthy.

The lack of coordinated money creation and money destruction in the expansion/contraction cycle results in self-amplifying processes (vicious circles of positive feedback): in the expansive phase, a vicious circle of excessive money creation and value growth; and in the contraction phase, a vicious circle of excessive money contraction and asset value destruction.

Principle II. **Constraints on the Central Bank's Regulation.** It cannot reliably and effectively regulate the credit/money creation process (in the expansion phase) and the credit/money destruction process (in the contraction phase), *because it is not cognitively and behaviorally designed to deal with "collective action problems"*. It may, of course, regulate the interest rate, but this may or may not be responded to appropriately by those debtors or potential debtors and/or by the banks themselves. It is a very *indirect influence* on market behavior; there is simply no direct control over these unstable socio-economic processes. And while the banks theoretically might self-regulate (as claimed by neo-liberal ideology), *the population of banks lack a cognitive framework to determine the appropriate level of money for each agent to create*[27] *-- nor do they have an adequate institutional framework (for instance, with legal powers) to coordinate their responses in the aggregate whatever their cognitive bases -- indeed, such an arrangement would be* illegal in the USA and the EU. Still, what happens systemically depends on the aggregate consequences of the actions of banks. Of course, the banks observe what one another are doing -- and obtain some degree of certainty in an uncertain, disorderly world through such observation and through mimicking one another, which is part of the problem.

A third principle refers to the contradictory purposes/functions of money which are not sufficiently taken into account in regulatory cognitive models and institutionalized strategies of correction (Burns and DeVille, 2003; DeVille and Burns, 1976).

Principle III. **Contradictory** functions of money make it difficult for a central bank to regulate consistently and effectively, for instance to maintain stable monetary value and to stimulate or enable money creation. The bank tends to be ambivalent and inconsistent in its regulatory actions.

The multiple functions of money are referred to in economics textbooks when money is discussed. What is typically not discussed is that the functions or purposes of money are contradictory (Burns and DeVille, 2003; DeVille and Burns, 1976). Policy and regulative efforts to deal with issues relating to one money purpose often undermines or blocks dealing with issues relating to other purposes: for instance, monetary value stability is potentially in contention with capital formation and socio-economic development. Hence, the dilemmas of the Federal Reserve Board for much of its history (DeVille and Burns, 1976).

Monetary value stability may be achieved at the expense of investment and growth; or, investment and growth may be achieved at the expense of unstable money values such as inflation. Or, attempts to deal with the use of money for speculation may hamstring consideration of encouraging capital formation and deployment.

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[27] This would determine (1) what would be an appropriate aggregate level for given markets conditions for expansion or contraction; and (2) what level of money creation or destruction for each bank involved. Otherwise, there would be a probability of overshooting or undershooting what would be stabilizing levels.

2. What Then? New Designs and Institutional Arrangements

On the basis of our research and that of others, we concluded that there are at least two fundamental problems to solve in developing a new design and institutional arrangement:

(1) Solve the coordination problem by having centralized, legally enforced money creation (regulation of the credit creation of individual banks and the aggregate effects), thus eliminating uncoordinated money creation and contraction as occurs in the existing banking system.

(2) Differentiate and regulate the contradictory functions or purposes of money, for instance, money as a medium of exchange; money as a store of value; money as capital, an instrument of investment and economic development; money utilized for speculative purposes, among other "functions."

2.1 Solving Coordination Problems (CAPs) in Money and Financial Systems

The lack of coordination in credit/money creation and credit/money destruction is a type of collective action problem (CAP). The behavioral phenomenon is well-known in the social sciences (CAPs entail "collective responses to possibilities of bonanza", on the one hand, and collective responses to "fire-in-the theatre", on the other; CAPs share characteristics with n-person prisoners' dilemma game (Buckley et al, 1974; Burns and DeVille, 2003)). Rapid contraction under conditions of no coordination (of exit actions) combined with contagion results in panic behaviour, a form of collective action problem as in the *fire-in-the-theatre panic* where the efforts to escape the burning theatre are not coordinated or organized (Buckley et al., 1974)). Multiple, uncoordinated, autonomous agents respond typically to possibilities of large gains – or, conversely, the threat of major losses -- by racing to get in -- or alternatively, racing to get out -- in the absence of a normative or social organizational order. The population of autonomous agents generate uncoordinated and destabilizing market behavior, associated with "bubble formation" as well as "bubble collapse" with respect to particular asset markets and productive sectors: whether real estate, equities, financial instruments such as derivatives, and hedge funds, or Dutch tulips, [28] South Sea "pie-in-the sky", and so on (Kindleberger and Aliber, 2005).

More generally, we suggest that the deep explanation of banking and financial crises lies in the key freedoms and power processes to create credit (that is, a form of money creation) which together with innovation capabilities tend to result in over-expansion and the generation of high risk prone and vulnerable systems. The key mechanisms of over-expansive credit-creation (e.g., through diverse and innovative forms of leveraging) but also of protective contraction (e.g., de-leveraging typically entails crowd-type behavior -- imitation and diffusion of self-fulfilling beliefs), generate uncoordinated and destabilizing market behavior.

Following the 1929 Crash, proposals for new institutional design(s) of money and banking emerged. Among these, the Chicago Plan (1935) -- much discussed and debated at he time but with limited influence on the reforms of the 1930s (Fisher, 1935; Phillips, 1994). The Chicago Plan -- and related proposals -- were taken up again after the 2007+ Crash (Benes and Kunhof, 2012; Turner, 2015). The Plan eliminated money creation (credit creation) on the part of private banks. Only the state central bank could create money (and this according to a money creation principle or rule complex/algorithm for money creation). Commercial banks could only lend what available in savings accounts for investment purposes (what is referred to as full reserve banking; there would be no fractional banking).

[28] The supply of money increasd dramatically in the 1630s Holland, serving to engender the tulip-mania episode. The price of tulips only served as a manifestation of the end result of a government policy that expanded the quantity of money and thus fostered an environment for speculation and malinvestment. The Dutch Tulip madness involved people using their own resources, but also borrowing money and mobilizing money in other ways. However, they did not just harm themselves, they harmed others – and the society – which could have made better use of the resources mobilized and wasted. That judgment applies to the 1929 and 2007+ crashes as well as numerous other crashes.

The money deposited in a bank in current or transaction as well as pure savings accounts could not be used for making loans.

Solving money market CAPs could be accomplished by the Central Bank creating all new money and feeding it into the economy through at least one of four mechanisms (cf. van Egmond and deVries, 2015):[29] There could be at least four ways to introduce new central bank money: (a) The Central Bank can create new money to lend to commercial banks, which would allocate the money in new loans; that is, respond to market demand in their locality; (b) through money creation, the government can provide subsidies to citizens, or groups of companies, for purposes of stimulating consumption and/or investment; (c) the government could also reduce the taxes of citizens, manufacturers, and other businesses. [(b) and (c) are ways to stimulate demand in the economy and economic growth] (d) governmental newly created money may be invested in government projects; the development of infrastructure, built environments, etc.

In sum, under a Chicago or similar institutional design, the Central Bank creates and puts into circulation money in the money and financial system through subsidies, tax reductions, and government expenditures as well as government loans with interest to commercial banks. As Van Egmond and De Vries (2015) suggest, the money inputs into the financial-economic system tend to stimulate the real econmy: "…it s a political choice to maintain or to increase the amount of money creation. In all cases the Keynesian stimulation of the economy can be far more effective than by means of interest rates only…the choice for inflaton (and also deflation) is a political one….This model experiments show that money creation by the government, according to a "model creation rule" which is directed to price stability and/or employment, indeed can stabilize the boom-bust cycles that occur in the present money and financial system."

Benes and Kumhof (2012) investigated and found through their simulation studies support for Irving Fisher's (1935) claims that the Chicago Plan had the following advantages (also see van Egmond and de Vries (2015)): (1) Much better control of a major source of business cycle fluctuations, sudden increases and contractions of bank credit and of the supply of bank-created money.
(2) Complete elimination of bank runs. (3) Dramatic reduction of the (net) public debt.
(4) Dramatic reduction of private debt, as money creation no longer requires simultaneous debt creation. Furthermore, output gains were found to approach 10 percent, and steady state inflation could drop to zero without posing problems for the conduct of monetary policy.

2.2 Solving Regulatory Problems Arising from the Multiple, Contradictory Functions/Purposes of Money

Here we focus on the **multiple contradictory functions or purposes of money** and suggest possible institutional arrangements for differentially regulating money functions. For example, Money I as a Medium of exchange, Money II as a store of value, Money III for the purpose of capital formation and financing project initiatives and development, and Money IV for purposes of speculation, which should be banned or highly constrained.

The diverse functionalities of money should be distinguished cognitively/categorically as well as institutionally. This corresponds to what Viviana Zelizer refers to as "earmarking" on the family and organizational level. The types/categories of money would be differentiated by special banks, accounts, and regulatory regimes, as already suggested in the categorization of money types, their specific

[29] A 2nd more decentralized way would be for the central bank to allocate credit/money creation rights of certain amounts to each and every bank under its perusal. This would be done on the basis of the bank's size and previous performance. The banks could only create money to the degree designated by the Central Bank according to its allocation principle or algorithm.

purposes, and regulatory logics: money Type I is for economic agents to use in market exchange and everyday transactions; Type II is savings money to be kept in accounts for future use. Type III is designated for capital formation and investment; it is provided by individuals, businesses, public agencies, and the central bank for purposes of investment and development. Finally, Type IV money used for speculative purpose would be banned or heavily constrained. In brief,

A. **Money I as a medium of exchange**. There will need to be institutional arrangements to assure sufficient money in circulation. Certain "Banks" would maintain current accounts -- for households, businesses, etc. -- payments are drawn on accounts and payments are made into them. There would need to be some buffering mechanisms to deal with **time and balance issues**. Mechanisms for expanding currency in circulation and/or its velocity would be required. The purpose and regulatory framework for this type of money is kept distinct from money in savings or money-as-capital (as today in the distinction between current and savings accounts).

B. **Money II as a store of value.** The purpose of Money II is savings: either to keep for future use and/or earn interest. Savings can be placed in special "banks", an institutional arrangement where depositors receive interest for their deposits, a rate decided by the central bank. Through setting the interest rate, the Sovereign can encourage savings or dis-savings. But a pure savings banks would **not** loan money. Of course, the central bank's payment of interest would be based on its budget resources and/or money creation.

The stability of money value is important both for money as a medium of exchange and as a store of value. Money as a unit of accounting -- conveys information through a system of prices. Money expressed in prices enables comparisons of commodities in a complex system.

C. **Money III for the purpose of loans and financing project initiatives and development**. This "money" would be mediated through banks obtaining money for this purpose -- the money would come from individuals, households, companies, municipalities wishing to earn more than they can earn through "savings associations" (Money II); these actors and the banks would be risk-takers; these investments would be secured to varying degrees by private and/or public insurance schemes, or by some degree of Sovereign guarantees. It would make sense to have specialized investment banks as earlier ("home loan", "agriculture," "international trade," "venture capital investors", etc.), whose levels of risk would likely vary considerably.

Financial capital may be "invested" in economic activities to facilitate the expanded production of goods and services by oneself or by others to whom one loans capital. Investing money to gain more money, the value of the original (level of) money is significantly -- exponentially -- greater than the value of the money that is not (available) to be exchanged in this way. For instance, just used for the purchase of commodities.

Financial capital in a "genuine market" for investment (stocks, shares, bonds, projects, etc.) is, of course, a productive power or force for development. Those who "specialize" (focus) on the accumulation and investment of financial capital play a crucial role in fueling economic growth that is essential to creating wealth.

The "sovereign" could supplement the capital of Money III banks with money creation for risk purposes. They would be in a position to precisely steer these developments, for instance, by creating money for Money III banks operating in priority areas, such as renewable energy, sustainable technology developments, medical research and development, etc. The money III creation legitimized by the state could be either in the form of subsidies and/or loans.

Of course, the policies and rules concerning Money III creation as well as provision of loans would need to be spelled out; there would be a distinct rule regime regulating type III money formation and disposition. This would not be arbitrary money creation (a la Argentina). Moreover, the Sovereign would be in a position to regulate the degree of risk-taking (from 100% to 0%).

D. **Money IV for purposes of speculation** -- for instance, with respect to stocks, bonds, and money exchange markets themselves -- should be banned, if possible, or at least heavily penalized and/or taxed. In a world of electronic banking, increased systematic and effective constraints on "casino economy" practices should be feasible.[30]

The very rich have monetary resources with which to play speculative games. Moreover, they are in a better position than most to obtain credit – for their speculations -- which doubly takes resources away from other, more essential uses. Cutting back on resources used in *speculation would free these resources for productive uses*. To the extent that advanced economies already put excessive resources into financial (and all-too-often speculative) dealings, and these resources are needed for innovation and development of such areas as alternative energy and transportation development, health care, etc.

As suggested in the article, banning may not be feasible. But constraints can be imposed. This is the point of the "Tobin Tax" and its several variants such as the financial transaction tax or the securities transaction tax.

Besides taxation and penalties, certain sectors should be excluded; other constraints could be that no borrowed money would be allowed (easy enough in the Chicago Plan since the Central Bank may specify and provide new money for appropriate investment sectors"; time constraints against short-term transactions -- not only a tax or penalty but time rules. In general, an elaborate policy regime is needed to constrain, if not partially eliminate, speculation (and the access of speculators to money resources.)

Keynes proposed in 1936 a transaction tax to be levied on dealings on Wall Street, where he argued that excessive speculation by uninformed financial traders increased volatility. For Keynes (he was himself a speculator) the key issue was the proportion of 'speculators' in the market, and his concern that, if left unchecked, these types of players would become too dominant! This is, in part, a correct assessment, in part because of the rapid accumulation of wealth; in part because Wall Street becomes a hot spot attracting others interested in speculating with some resources at their disposal including bank loans.

The original Tobin tax proposal (early 1970s) was intended to put a penalty on short-term financial round-trip excursions into another currency. His intent was "to dissuade speculators". By the late 1990s, however, the term Tobin tax was being incorrectly used to describe all forms of short term transaction taxation, whether across currencies or not. Tobin's method of "throwing sand in the wheels" was to suggest a tax on all spot conversions of one currency into another, proportional to the size of the transaction. In the development of his idea, Tobin was influenced by the earlier work of Keynes of general financial transaction taxes. Keynes proposed in 1936 that a transaction tax should be levied on dealings on Wall Street, where he argued that excessive speculation by uninformed financial traders increased volatility. For Keynes (who was himself a speculator) the key issue was the proportion of 'speculators' in the market, and his concern that, *if left unchecked, these types of players would become too dominant.*

3. Powerful Political/Socio-cultural Constraints on Any Major Financial Reform

[30] Monetary authorities have developed analytic frameworks and other tools to identify and penalize money laundering schemes. A similar cognitive, normative and regulative development should be achievable in the case of speculation. Of course, ambiguous and fuzzy cases will certainly occur.

Repeated attempts to constrain and regulate the uses and abuses of bank powers of credit creation and allocation have only succeeded partially, in spite of a long history of trying; there was partial success in the 1930s with the establishment of a complex of bank and financial regulatory arrangements (Ghilarducci et al., 2009: 148).[31] But "the New Financial Arrangements" (NFA) established in the 1970s and 1980s eroded much of the very limited reforms of the 1930s. Thus, the New Deal arrangements for bank regulation were reversed through a sustained counter-attack of neo-liberalism forces to dismantle the New Deal regulatory framework. These developments reflected the parallel ideological and institutional struggles that established neoliberalism and the principle of the supremacy of the market and its agents, in particular their capacity *to fully self-regulate and self-equilibrate* (Crotty, 2009).[32]

Part of the problem is that banks are not only serving important societal functions, which policymakers and multiple stakeholders support, but that many of them are also economically and politically powerful with their own private interests and substantial capacities to influence and manipulate policies and the architecture of regulation (Martinelli, 2007). Moreover, banks in a capitalist system are capable of major innovations in their strategies, products and procedures – often in ways to circumvent the regulations to which they are subject. For instance, hedge funds and private equity funds were designed to rely on exemptions from the US Investment Company Act of 1940 and the Investment Advisory Act of 1940 (this was accomplished mainly through avoidance of public offerings (and the greater transparency that such offerings would provide)) to avoid being subject to the demands of these statutes (Ghilarducci et al., 2009:158).

Neo-liberalism -- the godfather of the high risk banking and financial system that led up to the 2007 Crash -- was no emergent (or "invisible hand") phenomenon. There were powerful, purposive agents who initiated and established it. During the early period of the Cold War, a movement led by business interests and associated intellectuals worked to create a better climate for business and the wealthy in the USA (indeed, the "cold war" provided a context for stressing the importance of capitalism and the business community) (Burns et al, 2011).

Neoliberal ideologues attacked "excessive regulation," claiming that it was blocking innovation and economic growth. Many of the problems in the 1970s, for example, the phenomenon of stagflation, were blamed on government regulation and excessive government intervention. (All of this was taking place in the context of 1968, the Vietnam War, massive global demonstrations, and open radical movements in many countries.) This set the stage for the construction of new financial and regulatory conditions, the so-called New Financial Arrangements (NFA), which were also copied in Europe with substantial liberalization.[33]

In the period from the 1970s to the 2000s the restructuring and transformation of the banking and financial system entailed, among other things, the removal or rewriting of the 1930 laws and policies and the introduction of new ones.

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[31] In the USA, among others, the Glass–Steagall Act of 1933, the 1956 Douglas Amendment, the Investment Company Act of 1940, the Investment Advisory Act of 1940, the Commodity Exchange Act of 1936, the Security and Exchange Act of 1934 (with the 1963 Amendments) (Burns et al., 2012).

[32] Neo-liberalism -- the godfather of the high risk banking and financial system that led up to the 2007 Crash -- was no emergent (or "invisible hand") phenomenon. There were powerful, purposive agents who initiated and established it. During the early period of the Cold War, a movement led by business interests and associated intellectuals worked to create a better climate for business and the wealthy in the USA (indeed, the "cold war" provided a context for stressing the importance of capitalism and the business community).

[33] As Stiglitz (2011: 2) points out, "The regulatory structure did not keep up with changes in the financial system…The international banking regulatory structures (such as Basle II) were based on the normative idea of self-regulation…. " The prevailing deregulatory philosophy influenced those appointed to enforce regulation (Stiglitz, 2011: 2).

The growing ideology of neoliberalism, the range of technological innovations – some of them enabling avoidance of regulation – and, in general, the overall powers of the financial industry resulted in conditions where regulatory arrangements were increasingly inadequate to deal with the risky financial systems which emerged in the 1970s and afterwards. The neoliberal framework and its principles convinced regulators that agents in the financial markets were much more competent than themselves and were fully capable of dealing with any major risks and market instabilities. Regulators admired and trusted the industry's technical skills displayed in quantitative risk models of financial agents and the industry, which enabled them to price and manage risk better than earlier and better than the regulators could ever manage (Ghilarducci et al., 2009:154). Wray (2009: 815) points out:

> …innovations … had already undermined New Deal restraints while others were apparently pushed through by administration officials with strong ties to financial institutions that would benefit (from the changes, our addition). Whatever the case, these changes allowed for greater leverage ratios (in some cases reaching 20 to 30 times capital), riskier practices, greater opacity, less oversight and regulation, consolidation of power in 'too big to fail' financial institutions that operates across the financial services spectrum (combining commercial bank, investment banking and insurance and greater risk…..No one captured the reigning sentiment better (or played a bigger role in the deregulation movement) than Chairman Greenspan: 'Market participants usually have strong incentives to monitor and control the risks they assume in choosing to deal with particular counterparties… Private regulation generally is far better at constraining risk taking than is government regulation. In other words, the state would take a step back and let 'free markets' regulate themselves.' [Greenspan quoted in Ferguson and Johnson (2009)].

*The overall deregulatory thrust launched during the 1970s and developing more or less "hegemonically" until 2007 facilitated, among other things, major increases in credit expansion and leverage extremes***.** Increased leverage, motivated by higher bank profits, significantly increased basic vulnerability to default at the same time. The very substantial profits were not used to reinforce banks' capital base and solidity in a context of increasing stakes. The FRB under Greenspan operated more or less unconcerned with asset "price inflation" and focused instead on domestic US consumer price inflation which remained low largely due to cheap Chinese imports (Ingham, 2011: 254).

In general, during this period the normative climate was lax: macro-, meso-, and micro norms of prudence, and risk adversity were weakened or ignored. The general atmosphere became permissive and risk insensitive, embodoed in the attitude and policies of Alan Greenspan as Chairman of the US Federal Reserve Board, his statements and policies reinforcing the "lax climate". For long periods, FRB policy was to maintain very low interest rates, basically interest-free loans if one corrected for inflation, and at the same time to step in to rescue those suffering major failures during the 1980 and 90s (in the period from 1986 to 1995 more than 1000 (of 3,200+) savings and loans banks failed) and early the late 1990 and early 2000s (when the doc.com or tech bubble burst, the NASDAQ fell as much as 78%).[34]

[34] The bubble consisted of a combination of rapidly increasing stock prices, market confidence that the information-technology companies would turn future profits, market speculation in stocks, and widely available credit for venture capital created an environment in which many investors were willing to overlook traditional metrics, such as the price-to-earnings ratio (P/E ratio), By the end of the 1990s, the NASDAQ hit a P/E ratio of 200, a truly astonishing plateau that dwarfed Japan's peak P/E ratio of 80 a decade earlier. The collapse of the bubble took place during 1999–2001. Many companies failed completely, others saw stocks decline by 50-60-70-80%.

In sum, interest-based power relations, hegemonic cognitive framework of neo-liberalism (along with substantial theoretical and practical expertise),[35] pressure-group politics (with lobbyists, associations, think-tank pundits), and the systemic functional power of financial systems and agents; control over a strategic/key area in the contemporary world such as banking and finance makes for a high capacity to influence strategic decisions and policies as well as institutional designs (there is very limited countervailing power and expertise from the state as well as civil society and NGOs -- under the influence of hegemonic neo-liberalism). Global finance had become the key actor and the prosperity itself of the 1990s for developd countries derived to a great extent from a global growth of public and private finance and credit, facilitated by substantial deregulation and justified by neo-liberal economic doctrine.

Given the continued powerful counterforces and constraints on redesigning and establishing new systems of money and finance -- limited success in the 1930s and little success in the aftermath of the 2007 crisis at the same time the potentially highly unstable system continues to operate -- it would be useful to discuss "what next", "what is possible"? We see an immediate challenge, a need to systematically – with theoretical, empirical, and policy research -- counter the ideology that markets are basically self-regulating and equilibrating. It is widely recognized that most markets of any complexity and/or with complex products are highly regulated: legal arrangements, effective judiciary processes, safety-of-product regulations, occupational safety and labor force regulations, capital markets and banking regulation, regulation against deception and fraud, etc. Capitalist markets need state regulation – in order to minimize market failures, market conflicts and movements disrupting markets and the economy as a whole (Burns and DeVille, 2007). On the other hand, national government policies may become an obstacle to the development of global markets, they increase transaction costs, and they threaten the free circulation of people, capital flows, good and services.

In light of these considerations, a task force (or a network of taskforces) should consider some elaborated form of "embedded and regulated capitalism", similar but not equal to the regime prevailing in post-Second World War decades, prior to many of the Neo-liberal reforms including the New Financial Arrangements (NFA). Moreover, such taskforce(s) should proactively prepare for the next serious crisis when reform packages, which has been thought out and formulated earlier can be introduced and discussed. The tasks force(s) would be encouraged to prepare a knowledge base and models, mobilizing expertise and publishing "plans" or reports – at this time there is already considerable knowledge production of alternatives such as the Chicago Plan. It is essential to involve not only multi-disciplinary researchers but policymakers and practitioners in these preparatory deliberations and analyses.[36]

Conclusions

The paper concludes that reform is necessary -- if boom-and-bust cycles on the scale of those since 1929 are to be effectivcly regulated. One or more new alternative designs such as the Chicago Plan -- or variants of it -- should be developed into proposals for consideration whenever the opportunity for radical reform affords itself (for instance, a new crisis or the election of a reform government with a major mandate). However, in the short-run such reform is politically and ideologically difficult if not

[35] The framework of neo-liberal economic theory of the self-correcting, self-regulating markets according to which markets are capable of restoring equilibrium whenever internal or external forces disturb them.

[36] This was done in preparation for eventual EU food crises and the necessity of establishing new new governance and regulatory arrangements in the EU (Carson et al, 2009). Already, some in the EU Commission had anticipated problems – of hazard and security – prior to the food scandals in the 1990s, but could not gain support for introducing a new regulatory framework which had been prepared. Once the "mad cow disease" (particularly with British beef), and Belgium chickens with dioxin – and threats of boycotts and blockage of the single market – the regulatory framework–in–waiting could be introduced and put into place.

impossible. In the meantime, alternative system designs and institutional arrangements must be investigated and debated.

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APPENDIX 2: Actor-Oriented, Dynamic (ASD) Systems Theory Applied to Critically Theorizing about Capitalism, its Dynamics, and its Development and Possible Reformation.[37]

Among agent-based, dynamic systems theories are Archer's (1995) morphogenetic theory; Buckley, Baumgartner, Burns, and DeVille's theory of actor-system dynamics (ASD) (Baumgartner, Burns, and DeVille 1986; Burns, Baumgartner, and DeVille 1985); and Geyer and van der Zouwen's (1978) sociocybernetics. This family of theories, inspired to a great extent by Buckley (1967, 1968), is non-functionalist. Complex, dynamic social systems are analyzed in terms of stabilizing and destabilizing mechanisms. The structural and cultural properties of society are carried by, transmitted, and reformed through individual and collective actions and interactions. Structures such as institutions and cultural formations are temporally prior and relatively autonomous yet possessing causal powers, constraining and enabling people's social actions and interactions. Agents through their interactions generate structural reproduction, elaboration, and transformation. So one is concerned not only with the identification and development of social structures but with the specification of the concrete mechanisms—including feedback processes that entail both stabilizing, equilibrating features (morphostasis) and structure-elaborating or disorganizing and transforming features (morphogenesis). In such terms, institutional structures help to create and re-create themselves in an ongoing developmental process in which human agents in the context of sociocultural systems play constructive as well as transformative/destructive roles. Such an approach enables one to identify and analyze the complex mechanisms of stable reproduction as well as of the transformation of structures and the genesis of new forms (morphostasis vs. morphogenesis (Buckley, 1967)). Active agents with their distinctive characteristics, motivations, and powers interact and contribute to the reproduction and transformation of structure: establishing and reforming structures such as institutions, sociotechnical systems, and physical and ecological structures, but always within given constraints and opportunities and not in precisely the ways the agents intended. Internal selection and structuring processes that reproduce, modify, or transform are based on power distributions among societal agents and populations of organizations as well as individuals. These theories (especially in the work of Archer and ASD) theorize institutions and sociocultural formations in their own right, identifying and explaining the real and variegated structures that have emerged historically and are elaborated and developed in ongoing social processes. ASD has drawn, in particular, on Weber and Marx but redefining key concepts

[37] The particular social systems framework I use was developed by Walter Buckley, Tom Baumgartner, Philippe DeVille, David Meeker, myself, among others (the preference for ASD is motivated by the framework's highly sociological character, its agent- and rule-based conceptualization but also its taking into account material factors and technologies – in a word, a holistic approach). The theory incorporates in its models agents (individuals, groups, organizations, and networks), institutions, cultural elements and formations, material and technology conditions, interaction and transformational processes. (Other systemic perspectives relating to capitalism are those of Marx, World Systems Theory, Treadmill Theory, Ecological Modernization (see Burns, 2006, 2016; Burns and DeVille, 2007).

ASD is an agent-based and rule-based theory constructed to analyze complex, dynamic social systems. It considers the interconnectedness and dynamics of institutions and cultural forms. Multiple human agents involved in a system are interconnected and interdependent, distributed among diverse groupings, collectivities, positions where they play roles, interact, perform as well as transform. In addition to interactions among agents as well as between sub-systems, there are core processes: exchange(s) with material and social environments; unequal development of subsystems and subpopulations; differential accumulation processes; unequal distribution of knowledge, power, wealth, materials and other "resources."

in modern sociological terms (e.g., through institutional and cultural theorizing): concepts such as class, power, domination, exploitation, conflict and struggle, and unequal exchange and accumulation. Conceptual models of production, reproduction, and transformation as well as revolution have been elaborated. A part of the theoretical work has extended Marxist theory through theorizing about social agents (individuals and collective), institutions, and cultural formations and their role in processes of reproduction and transformation. Some of the characteristic features of ASD are as follows:

1. In addition to consideration of capital and capital accumulation (as one of the driving forces of the system), ASD pays particular attention to the accumulation of knowledge, skills, techniques, and technology (including organizational and managerial knowledge, techniques, and skills)—in a word, multiple processes of accumulation. There is also infrastructural accumulation as well as natural resource accumulation (and destruction). There is typically loss and destruction of key resources as well. And there is unequal access to and control over the resources or "wealth" of these accumulation processes, reflecting the power relations of modern society.

2. Because capitalism is characterized by market failures and unexpected destabilization, systematic regulation and stabilization strategies are essential for the stability of capitalism (see later). There has been sustained development of more or less effective regulatory mechanisms and the partial stabilization of capitalist systems in developed parts of the world (classical Marxism arguably exaggerated the power of capitalists to impose conditions on the nation-state benefiting them).

3. Everyday, "nonrevolutionary" democratic politics has played a major role in the emergence of welfare and economic regulatory regimes and contributed to the "refutation" of the Marxian prediction of the demise of capitalism (or possibly, simply the postponement of its demise). The logic of democratic politics is in many instances "noneconomic" in character, connected for instance with gaining and maintaining the loyalty of citizens, not only to ensure system functioning but also to predispose them to pay taxes, obey laws, and be ready to make other sacrifices such as fighting in wars. In general, ASD emphasizes the complex, ironic nature of democratic politics (Burns and Kamali 2003). It has also identified a "new politics" (Burns 1999), in which nongovernmental organizations (NGOs) and experts play key roles, that establishes new forms of regulation based on enterprise concern about reputation and goodwill (e.g., inducing the adoption of business ethical codes, ethical audits, and related internal regulatory arrangements). These processes take place also on the global level (see later).

4. Substantial attention has been paid to the politics and formation and re-formation of international economic institutions and development: on one level, the economic relationships between countries, on another level, that of international economic institutions dealing with markets, trade, banking, and technological development. There is also a long history of countries using political and military power to gain favorable trade conditions (England was a master at this in relation to countries such as Portugal, Ottoman, Egypt, India, and Kenya [under colonial rule], as well as other countries). ASD also examined the morphogenesis of international frameworks of trade, banking, standard setting, institution building, and reform.

Summing Up: The Importance of a Social Systems Approach

Structures and structural mechanisms are *more* than institutional and cultural processes. In particular, the interplay of physical structures, sociocultural systems, and interaction orders cannot be properly conceptualized, described, and analyzed on the basis of purely institutional and cultural theorizing. Emergent as well as purely technical and "natural" system linkages must be accounted for and analyzed for theoretical as well as practical reasons.

For instance, among the major subtypes of inter-structural problems are incompatibilities between structures of the social system, on the one hand, and structures in the environment, on the other—that is, a particular type of inter-structural problem (see later). Social system structures and outputs/performances may not fit and be sustainable in the system's environment (as in the Easter Island phenomenon, where the indigenous population developed institutional arrangements and practices that could not be sustained in the Easter Island physical environment; this led to an ecological and eventually social order collapse and the disappearance of most of the population). In general, complex feedback loops between societal orders and their environments generate under certain conditions forms of destabilizing and non-sustainable developments. Histories of the salination (and declining production) of agricultural land, desertification, deforestation, ozone depletion, global warming, among other negative developments, point to the role of human communities in the destruction of their natural resource bases. This is part of the materiality of socioeconomic life, with which a number of theories of capitalism have been concerned (Burns and DeVille, 2007).

The often exagerated critique of system theorizing in sociology (Burns 2006) has been unfortunate, since these theories have much to contribute to sociology and other social sciences not only on a purely theoretical level but also on the empirical level of describing and analyzing the complexity and dynamics of capitalist systems, including contemporary global capitalism.

Conceptualization of Capitalist Systems: Toward a New Synthesis

Forms of capitalism are triumphant in most parts of the world. Elsewhere, I have presented and discussed system-type theories that have addressed the complexity and dynamics of capitalism, predicting the long-term demise of classical capitalism, but for substantially different reasons. Below an ASD synthesis is presented. It examines selected aspects of the functioning (and malfunctioning) of capitalist systems, their conditions for sustained growth and expansion, their persistent tendencies to instability and crisis, and the mechanisms that produce and reproduce economic inequalities and power within and among capitalist societies (see Appendix for systemic representations of capitalism).

Systematic investigations of capitalism show that a complex of core institutions and cultural formations make up its structural and normative order. This order incites and legitimizes, among other things, acquisitiveness (greed), competition, accumulation of wealth and economic power, and substantial social inequality. Property rights enable, for instance, appropriation of gains and legitimize accumulation of wealth and power; they also reinforce incentives to pursue such gains and to use economic power and wealth (as well as other powers) to make gains and to defend as well as develop capitalist institutions.

Capitalism is then a powerful system not only for producing and distributing goods and services, wealth, and innovations in products and means of production but also for producing a spectrum of negative consequences: inequalities, exploitation, damages to third parties, social and psychological disruptions, depletions of natural resources, and environmental destruction, among others. Powerful agents (including capitalists and their managers) react to some of the consequences, judging them to be negative and trying in some instances to correct them or to limit their impact. Such countervailing actions—affecting the functioning and development of capitalism—become much more elaborate and vigorous in the context of democratic politics. A far greater range of agents can and do make demands for reform and regulation of capitalism. As a result, under conditions of democracy, there is a substantial *politics of capitalism* and capitalist developments. A variety of proposals for substantial reform are introduced, and a spectrum of regulating systems is established and elaborated. In this way, some (but, of course, not all) of the negative consequences of capitalism, including class and other conflicts, are addressed (although not usually fully corrected). Because capitalist institutional arrangements and their core processes along with countervailing movements and systems of regulation are socially embedded, there emerge *multiple capitalisms* differentiated by their diverse forms of functioning, regulation, performance, and dynamics. Such a sociological conception of capitalism is spelled out in the following sections.

Defining Cultural and Structural Properties

Modern capitalism is a powerful engine of change, generating revolutionary powers and transforming the conditions of life: economic, social, technological, and environmental. Dynamic capitalism is characterized not only by its freedoms (or minimalist constraints) and its acquisitive spirit (the pursuit of economic interests and gains) but also by its capacity to accommodate and symbiosize with diverse interests and values, the opportunities it provides for "positive-sum games" (with enforceable rules), its effective forms of power and control, and its competitive mechanisms. A brief description of these characteristics is given below.

I. *Multiple freedoms*: There is not only the decentralized freedom to trade and to initiate new products and forms of production or to commodify new goods and services and to penetrate new areas and establish commodity markets but also the freedom to create and adapt new forms of extended cooperation and organization (joint stock company, joint ventures, and franchises) and the freedom to compete (which is highly constrained in many groups and communities). Also, under capitalism the constraints on the accumulation of wealth and power are minimalized, hence the substantial tendencies to monopoly or oligopoly in many areas of production and distribution.

II. *The acquisitive spirit and more*: Substantial numbers of societal agents (individuals as well as collectives) are motivated and possess the resources to invest in new opportunities and projects, hoping to realize profits and to multiply their wealth (which is a form of generalized power). Capitalist institutional arrangements provide opportunities to pursue multiple interests that far exceed the mere interest to pursue wealth—for instance, the interest in sociability and cooperation with others (or competition with others); in exercising power and control over others; in doing something useful, such as producing a valuable good or service or creating a new good or service; in trying out an idea or starting a project with others; in providing jobs and opportunities for others; or in generating wealth for good causes. That is, *capitalist forms can accommodate an extraordinary range of material and ideal interests, direct and indirect.* And, indeed, the wealth generated by capitalism may support many values necessary or important to human life, including family and community life, welfare, education, music, art, religious institutions, and spirituality. Nonetheless, the strongest value—which is built into its institutions, for instance, its accounting systems (see Note 14)—is money value; its power and control mechanisms are mainly directed at gaining and expanding monetary wealth and capital accumulation. But as emphasized below, there are other countervailing forces, concerns, and movements.

III. *Complex institutional arrangements*: Modern capitalism consists of a *complex of core social institutions* for organizing production, exchange, and distribution. In particular, there are relatively *free markets* for raw materials such as land and energy, goods and services, capital, and labor. *Property rights and contracts* provide a systematic basis for knowing who owns what and who are creditors and debtors and distinguishes groups and populations in society in terms of differential control over economic resources and the means of production.[5] *Money* has multiple functions—as a medium of exchange, as a standard or measure of value, and as the basis for initiating economic projects and enterprises and expanding productive capacity and economic power, that is, capital.[6] *Firms operate as decentralized systems of institutionalized domination* over human and material resources,[7] innovating, producing, distributing, and exchanging in the pursuit of profit and economic power ("the acquisitive principle"). Their bureaucratic and other forms of control are based largely on private property rights,[8] which enable differential access to and control over resources. Superordinates (owners/managers) not only command their employees but also have the power to establish and reform relevant rules, to judge and to sanction, and to allocate resources.[9] *Systems are developed to mobilize and apply in a systematic way expert knowledge*—scientific, technical, and practical knowledge as well as the organizational capability to produce and distribute. A type of essential knowledge system is the *accounting systems* (the basis of strict calculation in economic rationalization), which focus on and quantify the essentials of costs, prices, and profits and enable calculability and the rational pursuit of profit and economic power.

IV. *Power and control*: Capitalism through enterprises, contracts, franchises, and other legal forms provides a high degree of control and regulatory potential. Substantial power can be exercised over human beings and resources in organizing and directing production. Knowledge and expertise can be mobilized to innovate in creating new technologies, techniques, and forms of cooperation and organization. The wealth generated by capitalist endeavors (as well as the knowledge and organizational capacities) is of interest to states and can be used to influence policy and politics as well as other domains of society (Baumgartner, Burns, and DeVille 1979). Through its generation of wealth and its freedom to innovate in technologies, techniques, and strategies, capitalism is capable of not only dramatically changing societal conditions but also circumventing or breaking out of many of the constraints imposed by regulative regimes such as those established by the national state (see later discussion). It is not only based on but also generates unequal power structures.

V. *Institutionalized competition and innovation*: Competition, in which particular actors struggle more or less openly for power, is one of the major mechanisms driving social innovation and change in capitalist systems—but not, of course, according to a program, plan, or design. Weber (1951) generally stressed the importance of such "competitive processes" in social change, under conditions where there is no clear-cut domination structure. Thus, Europe as a system of interconnected states in competition with one another operated to drive the transformative process of rationalization. There was no unified empire, as, for example, in China. Weber (1951) argued, "Just as competition for markets compelled the rationalization of private enterprise, so competition for political power compelled the rationalization of state economy and economic policy in the Occident and in the China of the Warring States" (p. 61). According to

Weber (1951:61), during the periods of the "Warring States," the very stratum of state prebendaries (or local honoratiores) who blocked administrative rationalization in the Empire became its most powerful promoters and change agents. In the private economy, cartellization weakens rational calculation, which is the soul of capitalism; among states, power monopoly prostrates rational management in administration, finance, and economic policy." Weber suggested that in the Orient, it took military or religious revolutions to bring about transformations: to shatter the firm structure of *prebendary interests*, thus creating completely new power distributions and, in turn, new economic conditions. Rationalization concerned not only administration but also taxation and budgeting, as well as military and diplomatic areas. Attempts at internal innovation in China through reforms were wrecked time and time again by the opposition of officialdom. In sum, lack of competition tends to inhibit or restrain innovation and transformative processes.

Competitive processes may be constrained to varying degrees. Some social orders have elaborate institutionalized systems for regulating competition and resolving conflicts. Others have few such arrangements; or the arrangements collapse under the pressures of crisis or transformative conditions, when key actors or groups no longer adhere to or accept the arrangements.

Core Mechanisms and the Logic of Capitalist Functioning

Of interest for our purposes here are several of the core mechanisms underlying the functioning and dynamics of capitalism. A brief description of these is given below:

1. *The complex of capitalist institutions* organizes the processes of socioeconomic production, distribution, and exchange in particular ways, generating multiple socioeconomic outcomes and developments. The latter include not only diverse effects in the sphere of economic production and market exchange ("spin-offs") but also unintended and unpredictable effects ("spillovers") in other spheres, such as the social, environmental, and political. Thus, capitalism is not a purely economic undertaking but political and cultural as well. Some goods and services, profitability (or loss), capital accumulation (or its failure), knowledge, new techniques, class relations, interests, and political mobilization and struggle are not usually confined to one sphere or segment of society but spread their effects throughout society (and multiple societies).

The productive base of a modern, capitalist society rests on a *complex of powers* (based on control "resources" and "wealths") and the accumulation of these powers: capital in the form of money—that is, generalized power to acquire or control resources and to motivate action; physical or material capital (in the form of machinery, buildings, land, other natural resources); human capital or "resources" (knowledge, value structures and commitments, skills, health); regulatory and governance structures; infrastructures (transport systems, including roads, railroads, waterways, air transport); communication systems (telephone, radio, television, and the World Wide Web [WWW]); natural resources (water, air, energy, minerals, and ecosystems). When considering accumulation as well as reproduction or sustainability, this complex of powers must be the focus of analysis, not just capital in the form of money wealth.

2. *Actors or classes of actors have different positions of power and control in the system* based on their roles in the division of labor and on their differential possession of property and other control rights. The different social positions have qualitatively and quantitatively different linkages to, and claims over, the gains of multiple outcomes and developments (spin-offs and spillovers); they also have differential linkages and disclaimers with respect to costs or burdens

and risks. Historically, the owners and managers of capitalist enterprises have been in a position on average to maintain profitability in spite of legal and normative pressures to maintain wages above subsistence levels and to incorporate the costs of externalities (e.g., addressing environmental damages). This fact and the "general interest" of many economic as well as noneconomic elites in the viability and sustained development of capitalism(s) constrains the pressures and tendencies to impose the costs of externalities and to alter the profitability equation. Still, there is a secular trend, as pointed out earlier, to constrain and redirect capitalist functioning, especially in the context of democratic conditions (see later discussion).

3. *Class and center-periphery differentiations*: The capitalist institutional arrangements generate not only unequal acquisition but also sustained unequal accumulation of capabilities, resources, and social powers among different actors or classes of actors with their differentiated positions in relation to the processes and outcomes of production, distribution, and exchange. **In general, the distribution of benefits and costs under capitalist institutional arrangements is unequal and tends to increase inequality over time.** The more promising entrepreneurs, enterprises, sectors, expansive regions, and nations tend to gain access to and attract additional resources and investments; the stagnant, marginal agents and areas lose access to or are denied such resources. *In the absence of effective regulation, extreme concentrations of economic power and wealth are generated, because power attracts and begets economic as well as other power(s) (knowledge, skills, techniques, managerial and governance capabilities, political mobilization opportunities).*

The inequalities lead, in turn, to systematically differential capacities to take advantage of and shape future productive opportunities as well as to avoid or overcome burdens and cost traps and vicious circles of stagnation and decline (see below). In general, power differences and uneven development capabilities tend to be reproduced and elaborated, other things being equal. A basic structure of inequality is maintained at the same time that there is some (bounded) mobility of nations, sectors, and enterprises as well as groups and occupations upward as well as downward.

4. *Unanticipated and unintended consequences in a complex system*: ASD provided a systematic basis for identifying and explaining some of the unintended consequences of capitalism as a complex, dynamic system (such a notion was also articulated earlier in the work of Karl Marx, Friedrich Hayek, and Robert Merton, among others). Complex systems operate, to a certain extent, autonomously from human intentions and concrete actions—the effects produced cannot be inferred from the effects intended. Of particular interest are unintended consequences arising from hierarchies—a class of systemic properties—related to social power relations between individuals, groups, classes, and system parts—for example, domination relations between classes or between core sectors and peripheral sectors. Some unintended consequences lead to unexpected dynamic properties (e.g., when conflicts generated by power struggles lead to escalating conflicts); system functioning and development may be highly destabilizing and unpredictable—a situation that challenges the basic assumption of the "rational expectations" school in economics. (ASD contributes to making unintended consequences and related developments explicit, identifiable, and thus subject to analysis and the formulation of possible policy recommendations.)

In sum, capitalism like any complex social system generates unanticipated and unintended spin-offs and spillovers, many of which cannot be known or predicted beforehand. This is due to bounded knowledge or modeling capacity as well as limited regulatory capabilities with respect to such complex systems (Burns et al,). Some unintended spin-offs and spillovers operate to destabilize or undermine capitalist effectiveness, institutional functioning, and legitimacy.

5. *Capitalist crises*: Historically, capitalist systems, in both their national and their international forms, have experienced a number of economic and political crises that destabilized them. Many diverse types of crisis have occurred and continue to occur: Crises of overproduction—ameliorated to some extent by government fiscal and credit policies—is one type. Others are, for instance, deep socioeconomic depression or hyperinflation; powerful speculative runs on a currency; extreme exchange rate volatility; disruptive cycles of investment and disinvestment; shifts in market boundaries leading to local or regional depression; failure or inability of the state or the industry associations to protect or stabilize the conditions of key economic sectors; escalating capital-labor conflicts as well as other conflicts among industrial groups, between debtors and creditors, or between producers and consumers; major sociopolitical movements aimed at radically transforming capitalism or even eliminating it; other political crises due to major ethnic, religious, or ideological conflicts that are difficult to address effectively within the existing political/administrative system; regulatory failures and crises in banking and finance; and government deficit growing in the context of rigidities (for instance, entitlements combined with political or power conditions that make it difficult for the state to increase taxes or government revenues).[10] Many of these developments in a capitalist system, if uncontrolled or unregulated, would severely disrupt its functioning and threaten its sustainability.

6. *Discontent and protest*: **Actors or groups of actors adversely affected by the operation or development of capitalism may under conditions such as a functioning democracy articulate their deprivations and disadvantages, for example, with reference to norms and values about "rights," "distributive justice," "fairness," or even "efficiency and rationality."** Some mobilize to try to reform the institutional setup or at least certain (for them) undesirable features of it. Such activities usually bring them into conflict with those having an interest in, or a commitment to, the established institutional arrangements. Beginning in the nineteenth century, labor movements challenged and struggled to transform or to replace capitalism. This resulted in the politics of capitalism and led to substantial regulation and welfare developments in a number of countries ("taming the capitalist dragon," Jaeger 1994). But there have been not only labor movements but also environmental, religious, and status groups mobilizing and pressuring for change. The idea of constructing and reconstructing the system has become an established organizing principle. A great variety of movements and pressure groups operate on all levels and in most sectors in opposition to some capitalist developments.

The general pattern is that capitalist concentration of power, uneven development, and negative spin-offs and spillovers tend to evoke discontent and anti-C-systemic movements—or the threat of such movements—to constrain or regulate the negative features of capitalist functioning and development. While labor and other social movements are prominent examples of sources of such social pressure, it is worth recalling that the farmer, small business, and consumer groups have also played a prominent role—and in some instances continue to play an influential role—in the opposition to tendencies toward massive concentration of and abuse of wealth and economic power as well as diverse negative conditions and developments in capitalist evolution. Although they may not challenge the principles of private property rights, they oppose excessive power concentration and systems of credit, distribution, and government policymaking that appear to favor capitalist economic domination. This has been particularly the case in societies with well-established democratic norms and institutions, a strong labor movement, as well as other social movements concerned with the struggle ofparticular status groups (ethnic, religious, gender, elderly, professions).

Such reactions (or even their potential) have led in numerous instances to the establishment of institutional arrangements to regulate the concentration and functioning of capitalist power. Regulation in practice has to a greater or lesser extent (at least in the Organisation for Economic Co-operation and Development [OECD] countries) constrained some misuses and abuses of economic power and its immediate economic, social, and environmental effects; typically, however, it has not blocked or prevented the uneven accumulation of economic wealth and power and the capacity of powerful capitalist agents to shape future developments in technology, production, and distribution. This pattern continues on the global level (see later).

7. *Regulatory development*: The history of modern capitalism is characterized by innovative attempts to create and develop state as well as private regulatory mechanisms designed to counteract or overcome systemic failures and instabilities (some attempts were also aimed at replacing capitalism with another system, such as socialism or communism). In dealing with crises, many capitalist societies have shown a remarkable capacity to promote policy strategies and to design regulatory processes operating to reduce negative impacts and to maintain or reinforce capitalism's stability and legitimacy. Public regulatory institutions and policies were established to limit capitalist instability and substantial concentration and abuse of economic power in the hands of relatively few. The imposition of public constraints is the result in some cases of enlightened self-interest and in other cases, the result of political movements and pressures. **The constraints are observable in the form of financial and monetary controls, antitrust laws, labor legislation, land-use regulation, regional development policies, pollution controls, and other environmental and social restrictions; these often entail substantial sanctions, including fines and prison sentences. Such measures have been designed, at least in part, to prevent or reduce the excessive negative consequences of capitalist functioning and development, in particular the extremes of inequality, the abuse of economic power, intense social conflicts, socioeconomic instability, and environmental destruction. In general, governments of most advanced countries (e.g., OECD countries) have more or less successfully regulated several (of course, not all) of the negative impacts of capitalist functioning. Elaborate regulatory frameworks are to a large extent state organized or sanctioned but with substantial private interest involvement.**

This regulatory conception of capitalist development applies also to dealing with social conflict. Class tensions and struggles as well as other conflicts (among producers, between producers and consumers, between creditor and debtor interests) are a persistent fact, arising from the institutionalized differences in power, the conflicting interests and commitments, and the uneven development of socioeconomic capabilities. For example, enterprise power relations translate into major decisions of owners/managers with respect to, for instance, transforming or closing a workplace, determining the type and level of production and employment, introducing particular forms of technology and work organization, determining directly and indirectly the qualitative and quantitative aspects of the work environment, and allocating resources and profits. Workers (and their labor unions if they exist) may react in various ways to the subordination to capitalist power. Different forms of power struggle and conflict between owners/managers and workers over the conditions and terms of employment have been characteristic features of capitalist relations of production. These conflictive tendencies take a variety of forms and are not easily suppressed under democratic conditions. Attempts are also made to establish and maintain a reasonable level of cooperation and productivity (for instance, with minimum levels of strikes, slowdowns, and other forms of labor-capital unrest) in the face of inherent conflict. The lengthy and continuing formulation of factory and workplace acts and labor market legislation is well-known. Parallel to this has been the establishment and sanctioning of various arrangements to facilitate communication, negotiation, and conflict settlements between capital and labor.

Modern societies are characterized by substantial differences in values and lifestyles, endowments, powers, and wealth. How is social agreement—and social equilibrium—achieved, if at all, under conditions of conflicting perspectives and interests? Barring systematic coercion, found in many peripheral economies, there are several established institutional arrangements (Baumgartner, Buckley, and Burns, 1975; Burns and Roszkowska 2007). Conciliation, mediation, and arbitration and their normative and institutional prerequisites have been outstanding and more or less effective mechanisms for reducing the intensity and violence of societal conflict, including class conflict. Welfare systems are another major institutional arrangement to contribute to and ensure widespread support and legitimacy for capitalist arrangements, in part by providing economic security in the face of capitalism's tendency to generate insecurity. Where these routines of relationship are established, group conflict loses its sting and becomes an institutionalized pattern of social life (Dahrendorf 1959:20). But class conflict is not the only source of tension and potential destabilization of modern capitalism. Concerns with the environment, animal rights (e.g., the use of animals in testing of products), disruption of communities, impact on marginal or weak groups, and impact on poor regions of the world are other major areas of contention.

Effective regulation depends on the development of models for describing and assessing the state of the system, identifying problematic developments, choosing appropriate solution strategies, and evaluating the success of selected strategies (Burns and Carson 2005). One particular class of models essential to capitalism are accounting systems—that is, coherent sets of numerical data collected, organized, and used in the assessment and regulation of socioeconomic systems such as business firms, government agencies, and nations. This is a major aspect of *systematic self-reflectivity* (Burns and Engdahl, 1998). Accounting systems provide "limited" or *bounded* representations and reflectivity of socioeconomic systems such as business enterprises, government agencies, and nation-states. There are always, of course, "uncharted territories" and new, emergent ones. This is currently the case for values related to issues such as biodiversity, aesthetic aspects of landscape, tranquility, leisure (in the sense of free time) or the opposite, and the lack of employment. Historically, one can observe a dialectic relationship between the use of established accounting models, the emergence of new problems and issues, critical self-reflection and innovation, and the construction of new accounting approaches. One strand of this dialectic has been to construct new accounting approaches for increasingly more encompassing levels (Burns et al. 2003).

But, in general, regulatory mechanisms never encompass the entire social system; invariably, there will be gaps and unanticipated developments (Burns and Deville 2003; see also Note 14). Not only can potential *external* factors (natural forces, "unexpected" disasters) disrupt capitalist system functioning and reproduction, but also *internal* (endogenous) factors and processes can generate systemic changes. Indeed, regulatory mechanisms themselves are often transformative in character—they change perceptions, modify practices, evoke new strategies, create new power relations, and so on. Most important, policies ultimately redistribute material power (wealth) as well as symbolic power among social actors with conflicting interests; they may contribute to the emergence of new value orientations, models, or strategies so that the overall stability of the system is undermined or threatened, contrary to intentions.[11]

In sum, regulatory institutional arrangements address a variety of capitalist failures and instabilities, resolve or prevent major conflicts, and overcome substantial loss of confidence in, and opposition to, the capitalist system. A minimum level of acceptance, if not satisfaction (reinforced by ideology) with capitalism, has been more or less tentatively accomplished in most OECD countries.

Conditions of the laboring classes and the general population have improved on the national level in these countries as well as in some LDCs. On the other hand, in many LDCs (with relatively resource-poor, corrupt, and/or authoritarian regimes that ignore or neglect the diverse problems and externalities produced by capitalist functioning), capitalist agents and their powerful systems are not subject to the same degree of regulation as in OECD countries.

8. *Socioeconomic diversity and multiple capitalisms*: The notion of a single, almost homogeneous global economy is a myth. The world economy is dominated by the triad of Europe, Japan, and the United States (as well as eventually China). Moreover, the capacities to exploit opportunities for gains and avoid burdens and losses are very unequally distributed. Given the substantial variation in institutional and cultural conditions, it is not surprising that a variety of different, but more or less effective and expansive, capitalist arrangements have been developed; there are also a variety of failed capitalisms. A corollary to this is that nations differ in their capacity and readiness to effectively regulate and stabilize capitalist functioning and development, explaining in part some of the differences in capitalist performance, for example, between DCs and LDCs, and also the variations within each of these categories (see later).

Thus, capitalism has taken significantly different forms in countries and regions such as Argentina, Austria, Brazil, Canada, China, England, France, Germany, Italy, Japan, South Korea, Russia, Sweden, Taiwan, and the United States. This variation is captured by the notion of the social embeddedness or contextualization of economic processes (Baugartner et al. 1986; Granovetter 1985; Hollingsworth and Boyer 1997). Production complexes and processes of capital accumulation tend to vary substantially: Socioeconomic accumulation is associated in some cases with the development of innovative production systems—for instance, through investment in R&D (research and development)—and the realization of new knowledge and techniques for improving production processes and products; in other instances, with petroleum extraction, as in the case of oil-rich countries like Saudia Arabia and Kuwait; and in still other instances, with international banking and finance (Switzerland, Luxembourg). Similarly, sources of disruption or blockage of production, market processes, and capital accumulation may differ substantially: in one case, civil war; in another case, runaway inflation; in yet another, a dictator overtaxing and constraining entrepreneurial activity; or various combinations of these (see later discussions).

A theory of multiple capitalisms derives from and compels attention to *the sociocultural and political contexts of capitalist processes and evolution.* Not only does such a conceptualization help us better understand the different development patterns of some DCs and LDCs, including those LDCs that manage some upward mobility (see below), but it also helps one to identify and understand some of the emerging differences between two obvious central "complexes," the European Union (EU), on the one hand, and the United States, on the other. The emerging conception of a "social capitalism" in the EU is differentiated from the more "unfettered capitalism" in the United States, suggesting the different sociocultural and political contexts of capitalist development in the two areas: differences in the conception of regulation (more acceptable and expected in Europe, less so in the United States); welfare considered as central to modern society and as more or less compatible with capitalist development (in the EU) versus welfare as a burden, possibly a necessary one but a constraint on effective capitalist expansion (in the United States); the environment to be protected even at the expense of burdening capitalism (in the EU) versus the notion of minimizing costs of environmental protection (in the United States); technology development approached with caution in the EU versus more optimism and risk taking in the United States. There is often less difference in practice than is expressed in the rhetoric of public statements and postures.

9. *Complexity, contradictions, and multiple sources of crisis*: As a complex, dynamic system, capitalism is only partially understood, even with the most elaborate scientific models and modeling efforts and accomplishments. Two general classes of problem situations can make for instability and malperformance and lead potentially to systemic crisis (Burns and Carson 2005):

- Systemic imbalances (overproduction or insufficient demand, excessive money or credit expansion); instability (price or demand volatility, speculative fevers); malfunctioning processes and subsystems (regulatory failures, blockage or collapse of key transport and communication systems); vicious or destructive feedback processes
- Social problems, intergroup conflicts and struggle, or disruptive opposition, especially under conditions where the instruments of conflict regulation and settlement are weak or inappropriate

Typically, problem situations become crises if they substantially and persistently disrupt the core processes essential for capitalist order: production and market activities, profit making, capital accumulation, and maintenance and reproduction of key socio-economic and governance institutions.

A common thread in the approach of ASD has been the conceptualization and analysis of inter-structural relations and the instabilities and problems to which they give rise. Multiple, incompatible structures cause performance failures, instability, and disorder at the same time that they are associated with social conflict and struggle between societal groups and classes. Several major areas of crisis relating to systemic and interstructural problem situations can be identified. The following is inspired in part by the work of Lockwood (1964) and Archer (1995).[12]

10. *Disorder from systemic lags*: One may speak of institutional lag between established institutions, on the one hand, and new relations of development, on the other hand. The emergent "forces" clash with institutional constraints. There are contradictions between established structures and emergent structures (such as new technologies and strategies, new forms of competition). For instance, knowledge and technical or technological developments lead to conditions exposing the limitations of existing institutions and regulatory machinery. There are costly negative developments or clashes with ideals or strong moral principles. Thus, in the area of contemporary information technologies, established legal regimes concerning intellectual property rights have proven inadequate, setting the stage for reform initiatives. Institutional incentives perversely block creative, fruitful developments or allow for extreme forms of unacceptable deviance. In the latter case, for instance, the introduction and development of the WWW resulted in many fruitful and important accomplishments but also enabled its exploitation for commercial pornography, racial music markets, extremist political and racist pages, among other problems. And such developments led to demands for increased and new regulation,

11. *Multisegment disorder* (e.g., contradictions between capitalist and democratic values and institutional arrangements): Through some of its unintended impacts on exogenous spheres of social life, capitalism generates disorder and dissatisfaction, which provoke movements of opposition and nonacceptance. That is, agents in its social and political context may turn against it. This is due to its many impacts, including negative ones on populations, communities, and the environment; it is systematically destabilizing and destructive. Hence, the importance of some form of monitoring and opportunities to voice and to point out problems and express discontent:

a relatively free press, scientific professions, and public participation. Systemic counterparts to capitalist arrangements—such as democratic political structures in one form or another—are also essential to its effectiveness and sustainability.

But as indicated earlier, democracy itself is destabilizing for capitalism, especially when the consequences of capitalist expansion, technological development, and capitalist accumulation are not immediately clear, so that reactions may follow long after, when problem situations have reached a crisis state, and major demands and conflicts ensue. It is also important to bear in mind that the egalitarianism of democracy clashes with the exclusiveness and concentration of wealth and power to decide future developments.

12. *Integrative disorder*: There is a lack of social integration (sufficient organization, social cohesion, or solidarity) as a basis to regulate, stabilize, or solve critical problems associated with the complex systemic interdependencies of capitalism. The problem of the relationship between system interdependencies and social fragmentation is particularly acute at the global level today (although there are currently movements and institutional developments that point toward partial solutions, as discussed later). **This can be understood as the lack of global governance and the fragmentation of states making up the context of global capitalism.** Some (Burns and Deville 2003, DeVille and Burns, 2004; Martinelli 2005) see emerging norms, community formations, international government organizations, and NGOs developing a regulatory context (but one that is highly uneven and incomplete). But the problem of growing "system interconnectedness" typically develops faster than the establishment of forms of cultural and political integration for purposes of constraining and regulating global capitalism. What future developments will lead to remains, in the final analysis, to be seen.[13]

A related problem is that of disorder from *improper or perverse social integration* with respect to system interdependencies (instead of a lack altogether of social integration for problem solving and regulation). Regulatory models and institutions are inappropriate and ineffective (possibly counterproductive), although they may have been appropriate and effective in the past. Regulatory regimes, which provided solutions earlier, often become problems and destabilizing factors in themselves. Regulatory institutions and policies ostensibly designed to limit or overcome particular destabilizing conditions of capitalism produce instead unintended consequences. This reflects incompatibilities between the regulatory system and capitalist development, arising from the fact that the regulatory system is designed to deal with relationships and processes of an *earlier, somewhat different capitalist system.* Invariably, the regulatory system is itself transformed.

The fact that regulatory apparatuses have never completely succeeded in preventing or controlling system instability and group conflict in capitalist societies is demonstrated by the occurrence of strikes, demonstrations, absenteeism, and complaints and symptoms of stress and "burnout" even in highly developed welfare societies such as those of the EU and North America (or, more generally, OECD countries). New types of problems and demands continue to emerge—for instance, problems regarding the quality of the work environment, participatory demands, and ecological considerations.

In general, the regulatory processes, while stabilizing the system temporarily to a greater or lesser extent, may create conditions for the emergence of new institutional problems and social conflicts and set the stage for intensified instability. For instance, in the area of money, what were conceived of as stabilizing measures—a single national currency and a central bank in the United States in the nineteenth century—themselves became new destabilizing factors, as when the Federal Reserve System (the central bank of the United States) contributed through its policies and regulatory arrangements to deepening and prolonging the Great Depression of 1929 and its aftermath (Burns and DeVille 2003).

13. *Reflexive disorder*: **A fundamental contradiction in the capitalist system is the requirement of order and predictability in a system that produces disorder and unpredictability**. This is a robust contradiction, as we argue briefly below. Capitalist owners/managers as well as regulators require stability and predictability to make decisions and govern their production activities in rational terms. At the same time, capitalist agents, regulators, and other groups generate instability and unpredictability through innovations in strategies, techniques, and technologies (innovation makes for some unforeseeable and unintended consequences and instabilities (see point V above). They are driven to do this particularly under conditions of competition and conflict. Capitalist agents in competition with one another—or anticipating future competition—innovate. They bring about changes in products, production processes, and distribution. Some of these changes have unintended consequences.

Also, democratic conditions themselves enable opposition to capitalist development (or certain aspects of it) and potential destabilization of capitalist functioning and development (contradiction between the capitalist system and democratic arrangements). Competitors, societal groups, and state agents respond to some of the many externalities generated intentionally and unintentionally in the context of capitalist functioning (including the expansion of existing projects and the launching of new ones). In general, the multiple responses are typically uncoordinated. For instance, NGOs may demonstrate against and, in other ways, draw media attention to diverse capitalist externalities. Or a government—anticipating the demands of citizen groups or responding to pressures from such groups affected negatively by past, current, or anticipated capitalist developments—may introduce new policies, instruments, and strategies of regulation. Even when there are attempts to avoid disruptions, changes in regulations have unintended, quite often disruptive, consequences in a complex system.

In sum, capitalist agents as well as regulators require stability and predictability to make rational decisions and govern their production activities at the same time that they and others (including the opponents to capitalism) generate instability, unpredictability, and disorder through their very actions and interactions. This systemic contradiction makes for unending crises.

Concluding Remarks: Revolutionary Powers and Critical Instabilities

The Future of Globalizing Capitalism

The failure of Marx's prediction of the collapse of capitalism as a result of declining profits and the failure to sustain capital accumulation can be understood in terms of the robustness of the system, given proper regulatory conditions. This robustness was particularly characteristic of those systems where capitalism was apparently most ripe for revolution, namely the advanced capitalist societies. One explanation of Marx's failure (if we assume that there might be some truth in his claim) to predict correctly was offered by World Systems Theory—namely, the exploitation of peripheral producers by those in the center, enabling center countries to sustain high levels of profitability and capital accumulation. Another explanation (which does not exclude the first) is that the successful establishment and elaboration of regulatory regimes in most OECD countries and some LDCs have stabilized capitalist functioning to a greater or lesser extent and at the same time have mediated class and other conflicts. The package of regulatory measures ensured capital as well as other key accumulation and development processes.

The regulatory complex as well as substantial reallocation of resources can (has been able to a greater or lesser extent to) limit or correct the development of extreme inequality and uneven development capabilities among regions, sectors, and occupational groups. Part of the corrective adjustment has been the development of modern welfare state societies in Europe and North America. *Unfortunately, such regulation is almost totally lacking at the international level.* Nor do such regulative regimes exist in most Third World countries to the same extent as in DCs (such as the OECD countries). Many of the earlier problems of capitalist system instability and sociopolitical confrontation have reappeared in new forms. For instance, there has emerged a new global politics of capitalism, as illustrated in protests since around 2000 against the World Trade Organization in Seattle, Washington; the G8 meetings in Prague, the Czech Republic, and Genoa, Italy; the World Economic Forum meeting in Davos, Switzerland; as well as the EU meetings in Nice, France, and Gothenburg, Sweden. Such protests are directed to some extent against global capitalist institutional arrangements and practices; they generate uncertainties and the risk of disruption of, and constraint on, capital accumulation and development. This sets the stage for a growing global politics of capitalism and the articulation of demands for increased regulation and even major restructuration of its arrangements.

In any analysis of g*lobalization* as a major elaboration and restructuring of, among other things, capitalist arrangements, it is essential to differentiate between an elaboration of older patterns and the emergence of entirely new patterns, mentalities, and strategies. Globalization is scarcely a new phenomenon if by globalization is meant the systematic and rapid increase in trade or even in foreign direct investment. Some forms of globalization date far back, which WST deserves much credit for highlighting. Others are more recent—for instance, the highly developed globalization prior to World War I as a result of the development of railroads and steamships. What is largely new today are the transnational and oligopolistic arrangements in a wide spectrum of markets. Also important is the overall predominance of financial regulation of productive activities. The latter pattern results, in part, from the increased liberalization of capital flows and the speculative dynamics that characterize much of this flow. These two fundamental processes have contributed to a declining effectiveness of national policies and regulation and imply, according to some, the "end of economic or capitalist politics." One would advise caution against such simple causality. While the world system has given capitalist agents opportunities to avoid national state regulation (which has been emphasized by WST), one can observe the emergence of several limited forms of international regulation (International Monetary Fund, WTO, standards organizations) and NGOs as effective pressure groups.

In other words, there is indeed an obvious question about the relevance and role of national democracy and state institutions as an effective vector for regulation and development of capitalism. Nevertheless, one finds new forms of collective organizations (e.g., many NGOs) that push for new policies and new forms of social organization. The "antiglobalization" movement will probably discover itself as not so much against globalization as against the hegemonic nature of the capitalist system as a system of social organization and power. Certainly, contemporary politics is no longer the usual "democratic representative processes" within a state framework (and its constitution) (Burns 1999). Politics has become a multitude of diversified, often decentralized modes of social organization and social action at local as well as more global levels, dealing with the *praxis* of social (including, of course, economic) life and attempting to invent alternative structures and strategies. To what extent there will emerge from the multiple experiments a coherent, more macro social model for capitalism remains to be seen. But there is no doubt that such evolution has already become sufficiently pronounced that it will sooner or later have major macrosocial and economic consequences.

In those national contexts with a well-functioning democracy, constraints have in the past been imposed on capitalist development (and forms of exploitation). Such a process may or may not emerge on the global level. But it is unlikely in the foreseeable future that regulation will be accomplished by a world state (a successor, e.g., to the United Nations); rather, one would expect intermediation through associations and networks of diverse actors: corporate interests and NGOs as stakeholders characterized by issue and situation specificity. Moreover, the ultimate constraints on capitalist development are arguably material limitations: pollution, resource depletion, and climate change, among others. In some cases, one or more key factors in the productive base are declining or threatened with substantial decline in the foreseeable future. Long-term sustainability will not be possible. **Historically, such non-sustainability has occurred but was limited in scope—that is, more local in character. Currently, there are more encompassing erosions but also more attention, greater mobilization, and sustained pressures to bring about reform and restructuring. More recently, new pressures and conflicts are driving innovations and efficiencies in areas neglected by earlier capitalists and their managers, who largely concerned themselves with labor-saving and labor-controlling innovations. Now more attention is being given to innovations in energy use, pollution control, renewal of resources, recycling, hydrocarbon fuel replacement, and resource use generally. Whether this development is sufficient to realize the long-term sustainability of capitalist systems remains highly uncertain.**

The discussion in these notes draws attention to several of the instabilities of capitalism—both as an economic system per se and as a force generating sociopolitical instability and environmental deterioration. It argues that appropriate regulation is essential for stabilizing capitalist systems and facilitating their effective functioning. The effective regulation and functioning of capitalism require not only appropriate institutional arrangements but also social agents who have the competence and motivation to lead and realize in practice the institutional arrangements under varying circumstances and to effectively adapt and reform them in response to operational failures and environmental changes. Such regulation also depends on political authority to introduce and implement regulative frameworks.[14]

Modern societies have developed and continue to develop revolutionary powers—driven to a great extent by dynamic capitalism—at the same time that they have bounded knowledge of these powers and their consequences. Unintended consequences abound: Social as well as ecological systems are disturbed, stressed, and transformed. But new social agents and movements form and react to these conditions, developing new strategies and critical models and providing fresh challenges and opportunities for institutional innovation and transformation. Consequently, modern capitalist societies—characterized by their core arrangements as well as the many and diverse opponents to some or many aspects of capitalist development—are involved not only in a global struggle but also in a largely uncontrolled experiment (or, more precisely, a multitude of experiments). The capacity to monitor and assess such experimentation remains strictly bounded (see earlier discussion in "Core Mechanisms"). The current capacity to constrain and regulate global capitalism is also severely limited, as pointed out above. How then is the powerful class of global capitalists to be made responsible and accountable for their actions? What political forms and procedures might link the new politics suggested above to the global capitalist economy? These are important research and policy questions. Theories that investigate and analyze capitalism and its evolution in more holistic ways—such as the systems theories presented in Burns and DeVille (2007)—have an important role to play in explaining capitalist dynamics and in developing suitable new designs and policies.

ASD Theory and the Future

ASD theory outlined here clearly points to a range of sociologically important phenomena: the material conditions of social life, social class, stratification, the conditions that affect group mobilization and political power, conflict processes, and the reproduction and transformation of capitalist systems. They have also incorporated a number of key concepts of mainstream sociology in constructive and useful ways: for instance, institutional, cultural, and normative conceptualizations; networks and movements; diverse types of social relationships and roles; social systems in relation to one another and to the natural environment; reproductive and transformative loops; and issues of sustainability issues.[15] **The ASD approach provides a multi-factor conceptualization and analysis of diverse forms of capitalism.**

The theories presented here perform an important function within sociology and among the social sciences and humanities: They contribute to a common language, conceptualization, and theoretical integration in the face of extreme fragmentation among the social sciences as well as within sociology itself. The latter suffers especially as a result of the institutionalized concentration on midlevel empirical and theoretical research—that is, “middle-range theorizing.” On a practical level, there remains the venerable challenge to establish and develop sociology and a social science complex that can readily and systematically put pieces of specialized knowledge together to address major contemporary problems, in particular understanding and taming global capitalism.

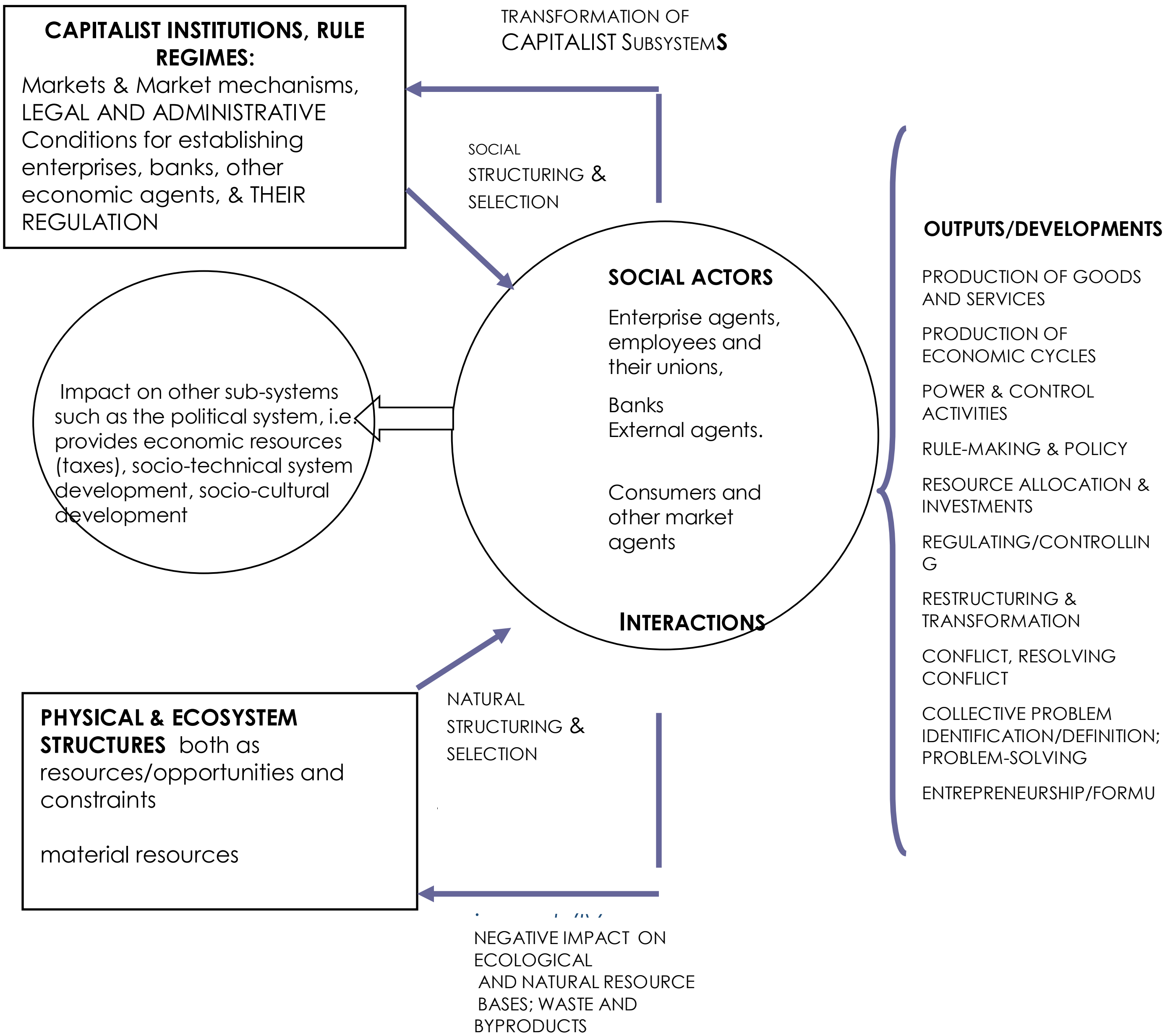
Notes

1. In the most abstract terms, a system is a set of objects together with relationships between the objects. Such a concept implies that a system has properties, functions, and dynamics distinct from its constituent objects and relationships. A systems approach is not unique to sociology. Many of the major theorists have belonged to other disciplines, including mathematics, with concerns and conceptual and analytic challenges rather different from those facing sociologists and social scientists.
2. Elsewhere, we consider systems theories such as Parsons’s (1951, 1966) functionalist systems theory. Functionalist-type theories share commonalities with Marxian systems theory (Burns 2006; Collins 1988; Stinchcombe 1968).
3. An institution or institutional arrangement organizes people in a complex of relationships, roles, and norms that constitute and regulate recurring interaction processes among participants. Institutions are exemplified by family, a business organization or government agency, markets, democratic associations, and educational and religious communities.
4. Collins (1988) criticizes Marxian and world systems theories (but his remarks apply to ASD as well) for not being concerned with “the origins of capitalism.” This is an important question. But so are questions such as the current functioning (or malfunctioning), the key regulatory controls, and the problematic development of capitalism.
5. Modern capitalism provides forms that enable agents to realize gains from complex transactions and those that take place over long periods of time, for instance, institutional arrangements that establish secure title or rights to property and to mortgage property. Ultimately, in case of disputes, one has access to impartial courts that enforce contracts, but one also has the opportunities (rights) to create new forms of extensive cooperation and organization, such as joint stock companies, franchises, and joint ventures (Olson 2000).
6. These different uses and functions of money in a modern capitalist economy are, in part, contradictory and a source of instability. For instance, the stability of money as a measure of value is persistently threatened by the use of money as a continual source of funds for capitalist investment, development, and further accumulation. Monetary and financial authorities establish and regulate the highly complex and potentially unstable money systems (Burns and DeVille 2003).
7. This system of domination (“class relations” for Marx and Weber) emerged as a twofold historical process through which sizeable population groups were separated from the means of production, while other groups had or gained control over and concentrated these means in their own hands (Burns and Flam 1987).
8. Ownership of the means of production is, in large part, private or if not fully private, highly independent from political or religious decision making and controls.

9. The extremes for Karl Marx were the owners and controllers of the means of production, on the one hand, and the property-less laborers, on the other. The latter were the subjects and objects of economic development in a certain sense. Of course, this model ignored other bases of social power and control such as the political in democratic societies or the emerging power of knowledge and expertise.
10. Mountains of public and private debts characterize—and threaten the stability of—several advanced states, mostly notably the contemporary United States.
11. Fully developed modern capitalism is not likely to be "the end of history"—that is, where there is no viable alternative to the capitalist market system (cf. Fukayama 1992). The question remains (as we will discuss later), Where do the dynamics of the capitalism system lead? And what is the place of "politics" in such an evolution? One must recognize the incompleteness of knowledge and regulatory controls and the contradictory nature of political actions and institutional arrangements.
12. Earlier (in "summing up"), we drew attention to the potential incompatibility between a socioeconomic order and the natural environment on which it depends for resources, which is yet another type of critical problem situation.
13. Even at the national level, there is typically a lack of systematic overview of the functioning and impacts of the multitude of interventions, and this tends to produce disorders and instability in its own right. Effective overall stabilization requires some degree of coordination and balancing. The challenge is amplified in the context of globalization and its multiple contradictory impacts.
14. Part of this process entails the development of knowledge and accounting systems to control these and other new problem areas. A major contemporary challenge is to develop information and accounting systems cutting across the economic, social, and material spheres. This is related to the emergence of the "triple bottom line" concept.
15. For example, in the case of Marxist theorizing, see Anderson (1976), Burawoy and Skocpol (1982), Burawoy and Wright (2000), Collins (1988), Moore (1966), van Parijs (1993), and Wright et al. (1992); for the development of WST, see Chase-Dunn (1997) and Wallerstein (2004); with respect to ASD, see Burns and Carson (2002, 2005) and Burns and Flam (1987).

APPENDIX: COMPLEX SYSTEM REPRESENTATIONS OF CAPITALISM

FIGURE 1: General ASD Model Of The Capitalist System: Key Mechanisms And Structuring Powers Of Interacting Socio-Economic Agents in an Ecological Context



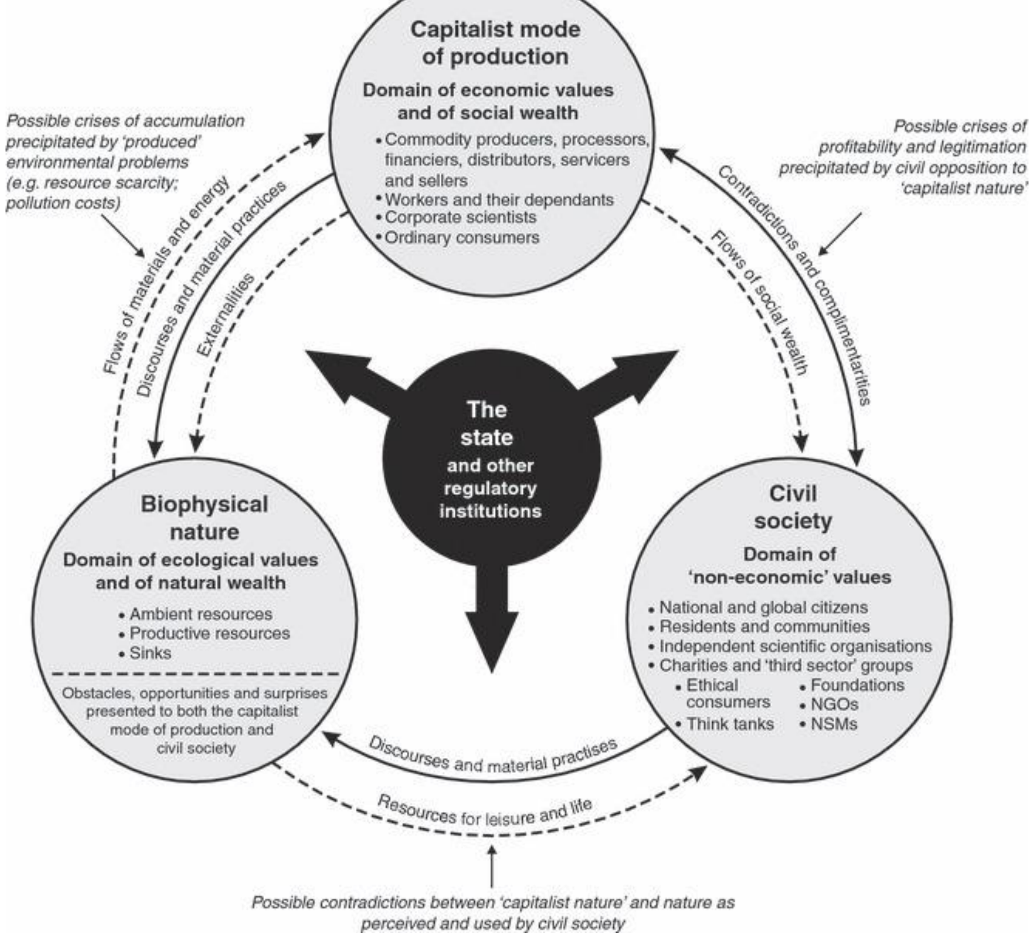


FIGURE XX: James O'Connor System's Model of Capitalism in relation to Nature

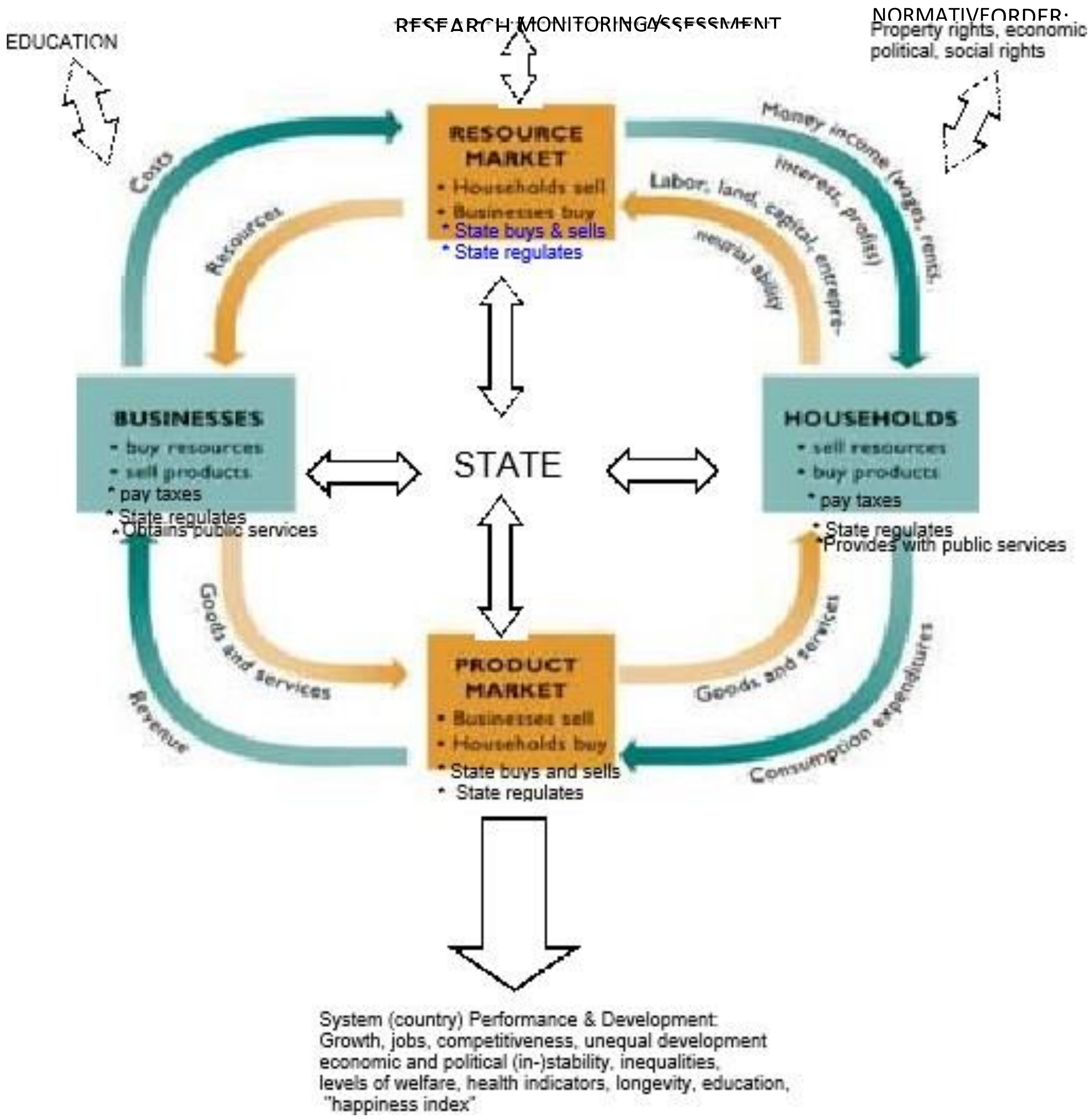


FIGURE X: Systems Model of Complex Capitalist Socio-economic System

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