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The history of Western futures studies: An exploration of the intellectual traditions and three-phase periodization

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ABSTRACT

The main purpose of this paper is to present a three-phase periodization of modern Western futures studies to construct historical classification. In order to reach this goal, the following intellectual traditions are introduced to review the philosophical and historical contexts that affect the very foundations of futures studies: (a) religions, (b) utopias, (c) historicism, (d) science fiction, and (e) systems thinking. The first phase (beginning in 1945 to the 1960s) was the era of scientific inquiry and rationalization of the futures characterized by the prevalence of technological forecasting, the rise of alternative futures in systematic ways, and the growth of professionalization of futures studies. In the first phase, futures had become objects of rationalization removed from the traditional approaches such as utopia, grandiose evolutionary ideas, naive prophecies, science fiction, religious attitudes, and mystical orientation. The second phase (the 1970s and the 1980s) saw the creation the global institution and industrialization of the futures. This era was marked by the rise of worldwide discourse on global futures, the development of normative futures, and the deep involvement of the business community in futures thinking. In the second phase, futures studies-industry ties were growing and the future-oriented thoughts extensively permeated the business decision-making process. The third phase (the 1990s – the present) reflects the current era of the neoliberal view and fragmentation of the futures. This phase is taking place in the time of neoliberal globalization and risk society discourses and is characterized by the dominance of foresight, the advance of critical futures studies, and the intensification of fragmentation. In the third phase, futures practice tends to be confined to the support of strategic planning, and hence is experiencing an identity crisis and loss of its earlier status of humanity-oriented futures.

1. Introduction

This paper examines the intellectual traditions of Western futures studies and its development through a three-phase periodization from 1945 to the present. Modern futures studies, as "a full-scale futures movement" (Bundy, 1976), developed after the end of World War II, and many of its core assumptions, concepts, methods, and names were generated and contested during the post-war period. To date, the field of futures studies is almost 70 years old. The traditional history of futures studies has been mostly concerned with the intellectual products of futurists in future-oriented thoughts, whereas

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several developments in futures studies have drawn on historical and social backgrounds, schools of thought, paradigms, important figures, regions, methods, specific events, and social demands; thus historical accounts appear in a variety of ways but most are related by chronological order. As such, the periodization as a classification of the field's history is an important means for historical explanation.

Periodization can be defined as "an analytical prism through which times past are organized into meaningful clusters in order to better understand the reasons for the occurrence of events or trends" (Butler, 2011). According to Jessop (2008), there are three main differences between chronology and periodization: (a) "a single unilinear time scale" vs. "several time scales," (b) "simple temporal coincidence or succession" vs. "more complex conjectures,"(c) "a simple narrative explanation for what occurs by identifying a single temporal series of actions and events" vs. "an explanatory framework oriented to the contingent, overdetermined interaction of more than one such series." In this context, periodization provides the conceptualization of the historical process and "sufficient scholarly veracity for historical research, pedagogy, and scholarship" (Hérubel, 2008). Furthermore, it can be "a rather effective method of data ordering and analysis" (Grinin, 2007). However, there is a lack of vigorous discussions about periodization in the history of futures studies, whereas other disciplines continue to challenge and redefine their historical periods and characters: marketing (Hollander, Rassuli, Brian Jones, & Dix, 2005), world history (Bentley, 1996), and economic thought (Popescu, 1965). In futures studies, only a few examples periodize its history or explain periodization-related issues (Schultz, 2012; Toffler, 1970a; Wheelwright, 2010).

As noted above, the key interest of this paper is to suggest a three-phase periodization of modern Western futures studies to construct historical classification. The paper is structured as follows: as a literature review, Section 2 discusses the diversity of the history in futures studies; Section 3 analyzes the intellectual tradition of futures studies and examines its impact on current futures scholarship; Section 4 offers a three-phase periodization: the scientific inquiry and rationalization of the futures (1945 – the 1960s), the global institution and industrialization of the futures (the 1970s – the 1980s), and the neoliberal view and fragmentation of the futures (the 1990s – the present). This paper also employs the historical individuality periodization approach.[1] Section 5 summarizes the findings and presents the final remarks.

2. Diverse histories of futures studies

Early historical accounts of the study of the futures are attributed to social scientists. For example, Winthrop (1968), an American sociologist, in "the Sociologist and the Study of the Future," presents a chronological review and evaluation of Western futures scholarship of natural and social scientists in the 1950s and 1960s. He maintains that the main purposes of futures studies are "predicting the future" and "proposing and describing utopias" and considers futures studies as "a new and main subdivision of sociology" (Winthrop, 1968). He credits the natural scientists, engineers, and technologists more than social scientists for the development of futures studies. Huber and Bell (1971), American sociologists, relate the rise of futures studies to the sociology of the future. They examine the social background leading the emergence of futures studies, review the literature of future-oriented works in the 1960s, and suggest "the Museum of the Future" to stimulate interest in futures. In *Futurology: Promise, Performance, Prospects*, Ferkiss (1977), a political scientist, examines the ideological and philosophical background, futurist methodologies and their impact on society. He views futurist activities as movements and an ideology to influence political bodies, and focuses on overcoming the limits of Western perspectives in futures studies.

Cornish (1977), along with members and staff of the World Future Society's *The Study of the Future*, a detailed multifarious account of the history of futures studies, covers the topics, methods, individual futurists, case studies, and organizations beginning with its pre-history to the 1970s (Cornish, 1977). Some of the well known and founding futurists such as Margaret Mead, Bertrand de Jouvenel, Glenn T. Seaborg, Robert Junk, Arthur C. Clark, Willis Harman, Daniel Bell, Issac Asimov, John McHale, Herman Kahn, and Alvin Toffler are cited as their work reflects the futurists' perspectives and explains the historical development of the study of the futures. Taking an idealist approach, Cornish and his associates stress the importance of ideas to shape the futures, as well as the institutional approach that pays attention to institutional settings, such as programs and organizations, for the development of futures studies. As one of the classic texts on futures studies, Bell (1997a)'s *Foundations of Futures Studies (Vol. 1)* is another comprehensive and well-researched analysis of futures history and not only includes a discussion of various sources of futures studies, including its history, main purposes, theoretical assumptions, and methods, but also debates topics, especially futurist ethics, art/science debate, and the fragmentation of the futures field. The major feature of his text follows the Enlightenment tradition by demystifying futures studies and promoting its scientific ways. Thus, he considers Condorcet as the father of futures studies and takes a critical realism approach to understand futures. He also proposes that science and art have different purposes that strongly contribute to the field. Art provides subjective experiences, such as intuition, creativity, imagination, etc., whereas science furnishes the objective categories of knowledge, such as the technical and rigorous, rational and dehumanizing, and codified aspects.

[1] According to Dietrich Gerhard (1973), historical periodization can be divided into three main types: (a) chronological periodization, which is "the enumeration of centuries and years," (b) evolution periodization, which "regards a period as a phase in a larger development," and (c) historical individuality periodization, which "bears the characteristic feature of the other fundamental concepts of historical thought."

Schultz's (2012) "The History of Futures" examines the nature of the study of the futures through a periodization of "five waves of futures work": (a) the oral tradition ("the deep myths of futures practice"), (b) the written wave ("patterns in the past" and "cycles of repetition"), (c) extraction and enlightenment ("the idea of progress through science, technology, and rationalism"), (d) systems and cybernetics (systems thinking and institutionalization of the field), and (e) complexity and emergence (diversity, and "global computing and interconnected communication"). Each wave corresponds to the thoughts, approaches, and primary concerns in the futures practice. She also explores the global history of futures studies from its prehistory to the early 21st century. Other histories and organizations from different areas are explored as follows:

(a) Non-western futures history: Iran (Hejazi, 2010), Islamic perspective (Zakaria, 2010), Asia (Inayatullah, 2007), Egypt (Göll, 2012), Africa (Fox, Rowntree, & Kaskinen, 2012), Australia (Ramos, 2004), and South Korea (Son, 2013).
(b) Academia: A general overview (WFSF, 2006), The Regent Foresight Program (Gary, 2010), University of Houston at Clear Lake (Markley, 1983), University of Hawaii at Manoa (Jones, 1992), Tamkang University (Chen, 2011), and Swinburne University of Technology (Slaughter, 2011).
(c) Professional organizations: Western futures organizations (Homann & Moll, 1993), Association of Professional Futurists (Crews, 2012; Hines, 2004), World Futures Studies Federation (Slaughter, 2005), and World Future Society (Cornish, 2007a, 2007b, 2007c, 2007d, 2007e, 2007f; Slaughter, 2007).

3. Intellectual traditions of futures studies

Our desire to know the future has shown itself in a variety of practices. Divination, prophecy, and prediction have existed in all cultures throughout history. For instance, forms of ancient divination include the Chinese I Ching, astrology, fortune-telling by cards, and palmistry (Ashe, 2001); Delphi was the site of Apollo's chief oracle in Greece (Ashe, 2001); the collective tradition of prophets in Judaism, Islam, and Christianity formed the background of their religious practice; Nostradamus, a 16th-century French prophet, predicted future events that would take place over four centuries later (Popkin, 1984). He remains as a kind of explanatory tool and promotes current interest when political and military disasters occur as some people are fascinated by his predictions. Although we argue that modern futures studies originated after World War II, its emergence as a scholarly field is the result of antecedent intellectual traditions and, in turn, each tradition has had a different impact on the practice of futures studies. The tradition of future-oriented thoughts can be traced back to ancient times and to the industrial periods. This backward glance reveals five intellectual traditions that inform the modern futures movement: (a) religions, (b) utopias, (c) historicism, (d) science fiction, and (e) systems thinking.

Future-oriented thoughts are embedded in all religions. As Ferkiss (1977) points out, religions such as Judaism, Christianity, and Islam, indicate that a human's future is in the hands of an eternal, all knowing God. Most believers expect God to intervene in the present and the future. Furthermore, it is believed that the fate of humans is predetermined by God. Particularly, in Christianity, the expectation of the second coming of Jesus and apocalyptic eschatology are core doctrines. In this context, human futures are to be left completely in the hands of God. However, there is no historical freedom according to Schelling, a German philosopher, who emphasizes the significance of human freedom in creating the world against the nature of God (Hudson, 2003). He argues that human freedom is associated with human actions and reasoning. To a certain degree, these religious traditions might affect an anti-humanistic and predetermined tendency in futures studies as they are prone to ignore the importance of the roles and needs of humans in futures works. As Godet (1994) states, "The passive attitude to the future is a legacy of religious fatalism." Such passivity is evidenced in believing humans have no alternative but to follow the purpose of God.

The utopian tradition, which, Cornish (1977) considers the beginning of modern futures studies, provides normative and preferred futures to futures studies. It brings our desires, hopes, future possibilities, and critical challenges to current conditions into the natural and social sciences (Hudson, 2003). The same rationales can be applied to futures studies. Plato's *Republic* suggests a vision of the future based on justice; St. Augustine's *City of God* proposes a perfect society based on love (Masini, 2006); Francis Bacon's *New Atlantis* offers an ideal science-based community located on an imaginary island with an emphasis on human knowledge (Cornish, 1977). Thomas Moore's *Utopia* is "an imaginary society situated on a faraway island, a democratic and classless society of generally virtuous men and women" (Wagner, 1996).

Historicism is another element that has affected modern futures studies. According to Popper (1957), historicism is "an approach to the social sciences that assumes that *historical prediction* is their principal aim, and which assumes that this aim is attainable by discovering the 'rhythms' or the 'patterns', the 'laws' or the 'trends' that underlie the evolution of history." Popper's criticism of historicism centers on the works of Hegel and Marx who supported a deterministic philosophy of history. Historicists assume that history is determined by specific conditions and that there are laws for the development of history (Sandberg, 1976). Condorcet suggests the law of the progress of reason (Bell, 1997b). He predicts the future will see an improvement in freedom and a reduction in inequality (Bell, 1997b). Comte proposes a law that describes human history through three phases of development: the theological, metaphysical, and scientific. Marx believes that human history evolved according to specific socioeconomic formations and forecasted the end of capitalism and the rise of socialism. Goldthorpe (1971) asserts that many futures studies, including Kahn and Wiener's *The Year 2000*, are under historicist influence. Accordingly, futures studies concentrate more on technological and economic forecasting (Goldthorpe, 1971). Thus, deterministic tendencies and the pursuit of evolutionary sequences in futures studies are closely related with the historicism tradition.

Science fiction is a way to provide alternative futures for social, cultural, and technological developments in futures studies (Cornish, 1977; Ferkiss, 1977; McHale, 1978). Most science fiction literature has been pessimistic. Zamiatin's *WE* (1924) and Huxley's *Brave New World* (1932) address the enslavement of mankind by scientific and technological progress. On the other hand, utopian themes can be found throughout the French author Verne's writings and Bellamy's novel *Looking Backward 2000–1887* (1888). In addition, some authors forecasted new inventions. The British novelist Lytton includes domestic robots, television, sleep-teaching devices, flying machines, and equality his books, especially *The Coming Race*, published in 1871. As we can see, there is a close relationship between futures studies and imaginative literature. Science fiction served as a vehicle of futures insights and played an important role for the functions of forecasting.

The last on the list of five intellectual traditions that informed futures studies is systems thinking. Systems thinking can be characterized by three aspects: (a) "the relationship between the part and the whole," (b) "a shift from thinking in terms of structure to thinking in terms of process," and (c) "the metaphor of knowledge as a building" (Capra, 1985). This tradition comes from systems science, cybernetics, and other related divisions such as artificial intelligence, cognitive science, computer science, and computational mathematics (Castellani & Hafferty, 2009). According to Capra, system science is "the study of the general properties of systems," whereas cybernetics is "the study of control and communication within systems" (Castellani & Hafferty, 2009). Although systems science and cybernetics took different trajectories, they were explicitly devoted to the development of futures studies since its inception (Bishop, 2008; Schmidt-Gernig, 2002). The three key concepts of systems thinking are feedback, information, and the dynamic interplay of the interconnected elements, and these concepts, it was believed, could change the view of the future. The conceptualization of the future as a dynamic and complex whole and using information as a driving force for social change stimulated the work of future-oriented scholars and their works. Accordingly, the systems thinking tradition spurred the development of futures studies in the following five ways: (a) trans- or inter-disciplinary epistemology, (b) concepts of future control, (c) systematic methodical approaches such as computational modeling, and (d) postindustrial transformation thesis such as an information and knowledge-based society.

4. Three-phase periodization

4.1. The scientific inquiry and rationalization of the futures: 1945 – the 1960s

The emergence of modern futures studies is located in the history of Western futures studies beginning in 1945 to the 1960s, a period referring to the scientific inquiry of futures and its rationalization by "developing a science of forecasting" (Cornish, 1977) and establishing professional knowledge of futures studies. Scientific inquiry of futures is the process in which futures studies makes an attempt to use the scientific method for forecasting and creating futures. This development reflects the growing attention to instrumental reason and technical competence in futures practice. Furthermore, rationalization is "the process whereby a domain comes to be organized more and more systematically in terms of such calculable mean-ends rationality" (Tanner, 2003). Rationalization of futures means that purposive-rational actions penetrate into the study of futures and futurists are encouraged to generate futures knowledge through a process of systematic inquiry as a professional practice. Both scientific inquiry and rationalization of futures are reinforced in three ways: by (a) the prevalence of technological forecasting, (b) the rise of alternative futures in the systematic ways, and (c) the growth of the professionalization of futures studies.

After the Second World War, western societies experiencing rapid economic growth looked at future studies to identify new markets and for portfolio management (Burns, 2003). Reconstruction and modernization required a new type of political system, including new technologies of government (Anderson, 2010), but during the Cold War, nuclear threats or new security issues greatly increased (Cornish, 1977). Futures studies was heavily influenced by the "Cold War and its military strategic thinking," with methodologies relevant to complex prospects from forecasting and planning in the United States (Tolon, 2012). Futurists began to use strategic methodologies, such as "modeling, game theory, the Delphi Method, and cross-impact matrices," as a way of resolving issues for "Cold War anxieties" and "nuclear mega deaths" (Tolon, 2012). Special attention was given to "imaginative tools of scenario writing" from "basic statistical tools such as trend extrapolation" (Tolon, 2012). Thus, scenario methods are attributed to "Cold War pressures" (Tolon, 2012). Gradually, futurists shifted their attention more to social problems on the local and global levels and examined the possible futures for humanity. Their efforts exercised a far-reaching influence on "an underlying change in the organization of government, business, and military forces" (Tolon, 2012). On the other hand, futures studies in the Soviet Union became a mechanism of its central planning project, the five-year plans of economic development, and technological progress with practice of forecasting in the 1950 and 1960s (Tolon, 2011). Futurists sought out their disciplines as an aid to government planning but did not pay much attention to initiating the study of futures, as the United States had (Cornish, 1977). The Soviet futures studies had deteriorated into a version of Marxism (which overshadowed the utopian socialists) (Bell, 1997c), optimism ("the world's unlimited resources" and "prospects for human advancement) (Tolon, 2011), as well as deterministic vision (capitalism's collapse and communism's triumph) (Cornish, 1977). This deterioration is derived from the deterministic conception of traditional Marxism. The key gesture to futures studies was subjected to long-range forecasting and strategic planning for the achievement of the communist vision as soon as possible (Cornish, 1977). In the 1950s and the 1960s, the futures practice regarding society and technology in the United States was part of the Cold War discourse about future threats and national security strategy, whereas Soviet futures studies was part of a centralized national development program focused on economic growth and a policy-making guide.

Technology and science advancement was the top priority for staying ahead of the enemy in strategic thinking. In this context, the prevalence of forecasting provided western society with methods concerning future threats and the means for making better decisions to guarantee future prosperity. In particular, the demand for specialized forecasting concentrated on technological forecasting: "In the 1950s and 1960s, the technological character of looking to the future was dominant and terms like 'technology forecasting' and 'technological forecasting' were very popular" (van der Duin, 2006). Lenz, who coined the term, "technological forecasting" (Martino, 1978), defines technological forecasting as "the prediction, characteristics, dimensions, or performance of a machine serving some useful purpose for society" (Lenz, 1962). Von Karman carried out the first modern technological forecasting for the future of aircraft propulsion in 1944 (Bell, 1973). The RAND Corporation, the prototype of the future-oriented "think tanks" was founded in 1948 while Von Karman worked on the Air Force Project RAND (Ferkiss, 1977). RAND profoundly contributed to futures studies for preventing war and stressing the need for national security in several ways: military long-term technological forecasts, establishment of policy-oriented futures studies, and establishing the mothers of think tanks, such as the System Development Corporation and the Hudson Institute (Cornish, 1977). In particular, in the 1950s, it originally developed the Delphi method for the expert opinion consensus, and Dalkey and Helmer used the Delphi method as a technological forecasting procedure (Cornish, 1977). In 1964, the publication of Gordon and Helmer's, *Report on a Long-Range Forecast*, earned them a worldwide reputation. The report was a typical exemplar of the method and contained forecasting for technological events up to 2000 and beyond (Gordon, 1994). Thus, technological forecasting has been used by governments, industries, and academia on thousands of occasions. Moreover, some academic books and journal articles explored the knowledge of technological forecasting and addressed the impact of technology on society (Ayres, 1969; Bright, 1968; Cetron, 1969; Isenson, 1967; Jantsch, 1967; Prehoda, 1967). Methods used in technological forecasting were extrapolation, growth analogies, trend correlation, and dynamic forecasting (i.e., modeling) (Lenz, 1962). Technological forecasting, a systematic projection of long-term futures, was looking for what was the most likely or probable future technological developments. It played an important role in spreading the futures perspectives and rationalizing human's future-oriented activities for an increase in future certainty and provided the probability and significance for future development of technology for making better decisions based on long-term strategic visions and provisions.

The second way scientific inquiry and rationalization of futures were reinforced stemmed from the rise of an alternative futures perspective. Kahn introduced the term 'scenarios' into futures studies as a way to imagine the variety of possible futures while working at the RAND Corporation in the 1950s. His thinking regarding scenarios originated with the assumption of extreme futures such as a nuclear war between the United States and the Soviet Union (Millett, 2003). Using the concept of scenarios, his goal was to prove that "much military planning was based more on wishful thinking than reasonable expectations" (Millett, 2003). The original meaning of scenarios by Kahn indicates that they were not for prediction or forecasting but for "alternative paths resulting in alternative outcomes" (Millett, 2003). In this context, in 1964, Kahn applied 'alternative futures' as a systematic method to examine alternative international orders, such as the Alpha, Beta, Gamma, Delta worlds (Bell, 1974). He used sophisticated techniques such as game theory, systems analysis, and cost-effectiveness ratios for guiding these four alternative future scenarios (Bell, 1974). These sophisticated techniques proved effective to provide rational consideration for building scenarios and a rigorous explanatory framework of the futures. Kahn's alternative futures object to prediction or a single future vision and instead promote hypothetical futures that embrace a spectrum of possibilities. The rise of an alternative futures perspective was fueled to some extent by the introduction of scenarios as scientific practice and the limits of forecasting approaches. The application of the alternative futures perspective was gradually taking place. Calleo (1965) suggested four future models for Europe: (a) America's Atlantic Europe, (b) a federal Europe, (c) a confederal Europe, and (d) an anarchic Europe. The Commission on the Year 2000 of the United States elucidated hypothetical futures for the United States society in 2000 (Bell & Graubard, 1967). Moreover, Downs (1968) offered five racial ghetto-future strategies in the United States: present policies, enrichment-only, integration-core, segregated dispersal, and integrated dispersal. Theobald (1968) was also envisioning the future of freedom as a better society in the United States.

The third way scientific inquiry and rationalization of futures were reinforced was through the establishment of futures studies as a viable profession, based on two observations: (a) the definition of the boundaries of futures studies as a discipline, and (b) the institutionalization of futures studies. Futures studies began to create its distinctive boundaries and unique identity when futurists started to use new terms to differentiate this discipline from others. Flechtheim coined the term 'futurology' in 1943 (Flechtheim, 1966). He argues that futurology "embraces (1) all types of prognoses, projections, linear programming, etc., (2) all planning procedures in economics, education, traffic etc., (3) an assessment of goals, norms, and values pertaining to the future" (Flechtheim, 1967) and considers it a broadly systematic science. Some futurists in Europe used the term futurology, but American futurists did not fully adopt it (Bell, 1997a). De Jouvenel rejected the concept of futurology because he believed that the futures studies cannot be scientific (de Jouvenel, 1967). Instead, he proposed futuribles, meaning possible futures, as the intellectual activity of forming opinions about the future (de Jouvenel, 1967). Gaston Berger, who was a main figure in French futures studies, coined Prospective (*La Prospective*) to indicate five future-oriented attitudes during the 1950s (Cornish, 1977; Godet & Roubelat, 1996). The former European Socialist countries used 'prognostication' as "the activity of man consisting in foresight and forecasting" in the 1960s (Rolbiecki, 1967). This concept developed into the term prognoseology as "a general theory of foresight and forecasting" (Rolbiecki, 1967). Futures research and futures studies are the widely accepted terms in the futures community, and futures research has become the preferred term for academia, especially in the United States (McHale, 1978). Moreover, the World Future Society often used it during the 1960s (Sardar, 2010); however, futures studies is the most popular and a very modest term in the futures field (Cornish, 1977; McHale, 1978). McHale prefers to use the term futures studies by arguing that it signifies "a more open-ended inquiry"

because it avoids "the more rigorous connotations of "research" with its implications of scientific objectivity and value neutrality" (McHale, 1978). Other terms include futuristics that was widely used during the 1960s and 1970s along with futurology and futurism (Sardar, 2010). Substantively, these terminologies reflect the discursive formation of constructing futures studies as a distinct field of knowledge.

The institutionalization of future studies refers to the formal and persistent process of performing futures practice in a systemic framework. According to Goodman and Dean (1981), institutionalized acts are "a behavior that is performed by two or more people, persists over time, and exists as part of the daily routine of the organization." The institutionalization of futures studies began not in the middle of 1940s with its birth, but in the 1960s with the formation of a futures communication network. The futures studies of the late 1960s became highly institutionalized by future-oriented organizations, periodicals, and university programs around world, including the United States and Europe. Europe's institutionalization occurred earlier than in America and started on the international level, whereas Americans initiated institutionalization on the national level.

During the 1950s and the 1960s in France, there were two main futurist organizations with their own periodicals. Gaston Berger established the Centre International de Prospective in 1957 and published the periodical *Prospective* in 1958 for concentrating on long-range national planning based on practical concerns (Bell, 1997a). In 1960, Bertrand and Helene de Jouvenel founded the Futuribles Internationales in 1960 and issued *Analyse et Prévision* (Analysis and Forecasting) in 1966 (Bell, 1997a; Cornish, 1977; JSF, 1970). The Futuribles Internationales was the first international future-related organization and provided useful information on all European activities to European countries including the Council of Europe (JSF, 1970). In 1965, the Mankind 2000 project was created by humanist futurists, including "Western Europe and Britain but including some Americans and East Europeans," to concentrate on "how to involve large numbers of the public in planning the future" (Waskow, 1972). It contributed to the "internationalization and democratization of the future research" (Boulding, 1978). Moreover, it held the International Future Research Inaugural Congress of Oslo with the International Peace Research Institute and the Institute fur Zukumfts-fragen of Vienna in 1967 (JSF, 1970). This Oslo conference conduced the establishment of the World Futures Studies Federation in Paris in 1973 (Bell, 1997a). Another influential futurist organization based in Europe was the Club of Rome, formed in 1968 with "its small membership and lack of structure" (Cornish, 1977). It paid attention to global problems such as the "skyrocketing population, increasing exhaustion of resources, population, poverty, etc." (Cornish, 1977). Its activities reflected the importance of environmental sustainability, leading to the worldwide dissemination of the doomsday syndrome in a 1972 book, *The Limits to Growth*. In the United States, in 1965, the American Academy of Arts and Sciences supported the establishment of the Commission on the Year 2000, chaired by Daniel Bell, as "an attempt to alert the intelligent public to confront to a number of difficult problems and tasks that the society might confront in the years ahead" (Bell & Graubard, 1967). This started a significant network with individuals and leaders in government service and academia based in the United States and published books such as *Toward the Year 2000* (1967) and *The Future of the U.S. Government* (1972) (Cornish, 1977). The World Future Society was founded in 1966 and published two periodicals: *The Futurists* and *The World Future Society Bulletin* (Cornish, 1977). It was a significant outlet for constructing U.S. futures studies and showed a national character concerned with the promotion of futures studies, development of futures methods, and education of the public (Cornish, 1977) as well as "Cold War concerns about civilian and military issues" (Tolon, 2012). This society embarked on the establishment of additional chapters in 1968 (Cornish, 1977) and had "groups or individual representatives in about 100 cities around the world (Cornish, 1977). Furthermore, it became the largest futurist association in the world consisting of "about 24,000 members in 80 countries as of early 1977" (Cornish, 1977). One of the major steps in the institutionalization of futures studies was due to the work of futurist organizations. However, the aforementioned organizations were not only the future-oriented ones. Other futurist organizations include the Science Policy Research Unit (1966, UK), Center Berlin for Future Research (1968, W. Germany), the Institute for the Future (1968, US), and the Czechoslovak Futurological Society (1968) (for more details on these organizations, see (JSF, 1970)).

The first futures periodical can be found in the British Journal *Tomorrow*, which only published a few issues and ceased publication by World War II (Cornish, 1977). It contributed to connecting the work of futurists with science fiction periodicals. In contrast, the futures periodicals of the 1960s got out from under the influence of science fiction, focusing more on futures issues. In 1966, in France, the journal *Analyse et Prévision* dealt with the work of De Jouvenel and Futuribles. In 1966, in the United States, the World Future Society launched the *Futurist* newsletter that later became a regular bimonthly publication. In 1968, an academic journal with a proposed title of *Futures: Journal of Forecasting and Planning* espoused "a strictly useful and action-oriented way, articles and information on the methods and practice of long-term forecasting and futures research" (JSF, 1970). *Futures* soon became the major futures magazine supporting decision-making processes in organizations, and academic motivation and practice. In 1968, in West Germany, O.K. Flechtheim became the editor of *Futurum* which involved participatory futurology for human empowerment and emancipation (JSF, 1970). In addition, *Technological Forecasting and Social Change* was published in the United States in 1969 as a technical or quasi-technical journal (Cornish, 1977). Other periodicals grew rapidly in the late 1960s and early 1970s. According to John Naisbitt, futures-related professional journals sharply increased from 12 in 1965 to more than 122 in 1978 (Bell, 1997a).

As the first stage of academic institutionalization, educational programs emerged in American colleges and universities and established pedagogical strategies for promoting future-oriented thought and developed the theoretical aspects of futures studies. Alvin Toffler (the New College for Social Research in New York City), Jim Dator (Virginia Polytechnic Institute

and State University), and Wendell Bell (Yale University) introduced futures courses. In particular, Jim Dator has taught futures studies at the University of Hawaii after his move to Hawaii in 1969 and served as the director of the Hawaii Research Center for Futures Studies in 1971.

In the decades-long development of an infrastructure for futures studies, there were 12 publications that helped the fledgling field of futures studies to become generally accepted knowledge for scholars, policy makers, and the public during the second half of the phase: Polak's *The Image of the Future* (1961) (Polak, 1961), Clarke's *Profiles of the Future* (1962) (Clarke, 1962), Ellul's *the Technological Society* (1964) (Ellul, 1964), Gabor's *Inventing the Future* (1964) (Gabor, 1964), Boulding's *The Meaning of the Twentieth Century* (1965) (Boulding, 1965), Kahn and Wiener's *The Year 2000* (1967) (Kahn & Wiener, 1967), Beckwith's *The Next 500 Years* (1967) (Beckwith, 1967), Chase's *The Most Probable World* (1968) (Chase, 1968), Ehrlich's *Population Bomb* (1968) (Paul, 1968), Jungk and Galtung's *Mankind 2000* (1969) (Jungk & Galtung, 1969), McHale's *The Future of the Future* (1969) (McHale, 1969), and Toffler's *Future Shock* (1970) (Toffler, 1970b).

4.2. The global institution and industrialization of the futures: the 1970s – the 1980s

The second phase of futures studies refers to the global institution and industrialization of the futures that began in the early 1970s and lasted through the 1980s. This phase was characterized by the rise of world-level discourse and activity concerning global futures, the development of normative futures, and the deep involvement of the business community in futures thinking. The global institutions of futures refer to two aspects: (a) the narratives of global futures that were becoming central to development discourses and were constituted in global organizational forms; and (b) how global futures discourse and activity were affecting perceptions of the future in the nation state and other disciplines. Industrialization of futures means that many companies adopted the concepts of futures studies as core competence to their strategic planning for organizational innovation. A range of futures methods, in particular scenarios, was taken up by industry as industrial-strength tools.

The rise of futures studies as global institutional norms was driven by two main events: (a) the pessimistic message of *The Limits to Growth*, and (b) the 1973 oil crisis (van der Heijden, Bradfield, Burt, Cairns, & Wright, 2002). The Club of Rome published a report, *The Limits to Growth*, in 1972 that produced computer-modeling scenarios for the future global economy and environment. The report talked about how both unlimited economic and population growth would cause global dangers such as scarcity of natural resources, environmental deterioration, malnutrition, and economic collapse. Its apocalyptic discourse produced a worldwide reaction. A year after *The Limits to Growth*'s was published, the oil crisis of 1973 brought a strong question on "the fundamental validity of the 'predict and control' paradigm" (van der Heijden et al., 2002) and challenged traditional economic forecasting of the future. The crisis completely changed the ways of thinking about futures. Furthermore, the Royal Dutch/Shell Group had adopted the scenario method to explore the possibility of an oil crisis in 1972 (van der Heijden et al., 2002). This method allowed the Royal Dutch/Shell Group to prepare for the oil crisis allowing them to become a major oil company. Through the Royal Dutch/Shell Group success story of utilizing scenarios, the scenario approach became an important tool in business management to discuss the future or futures of the company.

As the result of this paradigm shift, futures studies extended its subjects and application into global issues and more normative futures. *The Limits to Growth* triggered global debates about the future between the neo-Malthusian pessimists and technological optimists. The neo-Malthusians believed that the human industrial civilization would collapse due to the growing consumption of limited resources (McNeely, 1997). According to this prediction, "ecological and economic turmoil are inevitable, resulting in the collapse of populations and civilizations" (McNeely, 1997). On the other hand, technological optimists did not assume there were limits in material growth. They argued that technological advancement would solve problems and improve material well being (McNeely, 1997). *The Limits to Growth* was countered by *Models of Doom* (Cole et al., 1973) and *The Doomsday Syndrome* (Maddox, 1972).

The tension between the neo-Malthusians and the technological optimists grew to explore alternative future scenarios about how to deal with the population, resources, and economy. In response to *The Limits of Growth*, the views of the technological optimists were presented in *The Next Two Hundred Years: A Scenario for America and the World* (Herman, Brown, & Martel, 1976) and *the Ultimate Resource* (Simon, 1981). Kahn and his colleagues projected life in America and in the world over the next 200 years in terms of prosperity based on exponential growth. Simon rejected the limits to growth' thesis also. In particular, Simon had faith in human ingenuity and technological capability. However, the neo-Malthusian perspective warned the public and actively attacked the technological optimists. For example, the Worldwatch Institute published the *State of the World* reports (produced annually since 1984) (Carter, 2007) and the UN's World Commission on Environment and Development issued *Our Common Future* (1987) (WCED, 1987). In 1980, *The Global 2000 Report to the President*, sponsored by the U.S. government, opened with ominous forecasts (McQuillan & Preston, 1998):

> If present trends continue, the world in 2000 will be more crowded, more polluted, less stable ecologically, and more vulnerable to disruption than the world we live in now. Serious stresses involving population, resources, and environment are clearly visible ahead. Despite greater material output, the world's people will be poorer in many ways than they are today.

The Limits to Growth, which was well known as a global modeling exercise, had significant impact on established disciplines such as economics, sociology, and political science (Chichilnisky, 1990) and launched "the foundation of a series of scenarios studies on the survival of mankind" (van Steenbergen, 2000). As a result of *The Limits to Growth*, global modeling

received credibility as "a policy-relevant method of analysis" from the popular press and the environmental movement (Edward, 2010) and can be perceived as "one of the first expressions of social scientific concern with the globalization processes" (van Steenbergen, 2000). During the 1970s and 1980s, national governments, UN programs, universities, and research institutes supported a number of global modeling projects (Cole, 1987) as they widely applied to futures scenarios, thus creating alternative future courses of population, world resources, pollution, poverty, industry, and technology.

The development of normative futures is the second feature of the global institution and industrialization of the futures. The main theme of normative futures was its vision of an 'after industrial society' with the emergence of a new society, based on how information technology would change society. The emergence of a new type of society was diversely labeled as "the Post-Industrial Society" (Bell, 1973; Touraine, 1971), "the Wired Society" (Martin, 1978), "the Telematic Society" (Nora & Minc, 1980), "Third Wave Societies" (Toffler, 1980), "Information Economy (Porat, 1977), "Network Nation" (Hiltz & Turoff, 1978), "Anticipatory Democracy" (Bezold & Renfro, 1978; Toffler, 1970b). The various images of a future society reflected that the commentators had different preferred futures, placed different emphases on the dimension of future society, and espoused different ideas on the relationship between society and technology.

The positive and negative future images of a post-industrial society can be seen in Bezold and Olson's four possible scenarios (Marien & Jennings, 1989): (a) "the highly optimistic high-tech information society," (b) "optimistic creative society," (c) "the disappointing things bog down scenario," and (d) "the pessimistic 1984 and beyond scenario." The first two scenarios are highly optimistic. The optimistic view of the postindustrial society included a booming economy, rapid technological progress, and no major privacy problems. This is well described in Bell's *Coming of Post Industrial Society* (1973) (Bell, 1973), Kahn and his associate's *The Next Two Hundred Years* (1976) (Herman et al., 1976), Porat's *The Information Economy: Definition and Measurement* (1977) (Porat, 1977), Toffler's *The Third Wave* (1980) (Toffler, 1980), and Naisbitt's *Megatrends* (1982) (Naisbitt, 1982). All gave profound insight on what the rising society would be like and provided the belief that the new society would provide more opportunities for many. It was affirmed that information would play a pivotal role in the new society. In particular Daniel Bell emphasized the significance of the service industry and theoretical knowledge as main characteristics of a post-industrial society. On the other hand, the last two scenarios presented pessimistic futures with slow technological process, economic hard times, and strict social control. Examples of this interest in detecting gloomy future technology are evident in publications such as Touraine's *The Post-Industrial Society* (1971) (Touraine, 1971), Ferkiss' *The Future of Technological Civilization* (1974) (Ferkiss, 1974), Macrae's *America's Third Century* (1976) (Macrae, 1976), Lamm's *Megatraumas: America at the Year 2000* (1985) (Lamm, 1985), and Shaiken's *Work Transformed: Automation and Labor in the Computer Age* (1985) (Shaiken, 1985). The French futurist sociologist Touraine proposed that the post industrial society would be a "programmed society" governed by a technocratic class endowed with knowledge and bureaucratic power. Ferkiss also specifically argued against the threat posed by technology toward political freedom.

The third feature of the global institution and industrialization of the futures is the deep involvement of the business community in futures thinking. Futures thinking had become a popular corporate activity for the development of strategy after the dramatic success by the Royal Dutch/Shell Group in the early 1970s. According to Dror (1970), futures studies contribute significantly to business management by "improving background information, stimulating new ways of thinking and providing decision inputs." The UNIDO *Technology Foresight Manual: Technology Foresight in Action, Vol. II* briefly addresses how the company responds to the uncertain environment (UNIDO, 2005):

> In the last two decades several large enterprises in such diverse sectors as energy, automotive, telecommunications, and information technology have established foresight groups and strategic planning processes, which analyze the long-term prospects of new technologies and their impact on markets and corporate strategies. DaimlerChrysler's Society and Technology Research Group (STRG) is one of the first future research groups to be established within a company. Since 1979 it has investigated, in close cooperation with its customers, the factors shaping tomorrow's markets, technologies, and products. Its focus is social science-based futures and business environment research to support strategy and product development processes.

Linneman and Klein (1970) discovered that in 1977 approximately 22% of the Fortune 1000 companies in the U.S. used scenario methods for their planning processes. Their follow-up survey showed that by 1981, 47% of Fortune 1000 companies used scenarios and Fortune 100 companies accounted for more than 75% (Linneman & Klein, 1983). Europe also conducted a survey on the use of scenarios in the top 1100 European companies. In 1981, 36% used the scenario method (Malaska, Malmivirta, Meristo, & Hanson, 1984) and in 1985, 40% (Meristö, 1989). The survey showed that scenario practices in corporations had become popular and more U.S. companies had adopted the scenarios methods than European companies. The Southern California Edison Company, for example, found that the scenario method was more adequate than the traditional forecasting methods for business planning (Mobasheri, Orren, & Sioshansi, 1989).

4.3. The neoliberal view and fragmentation of the futures: The 1990s – the present

The third phase of the periodization of futures studies can be labeled as the neoliberal view and a fragmentation of the futures field that began in the 1990s with the end of the Cold War. These two phenomena were brought on through the ever-deepening process of globalization, the rampant spread of information technology, and the environment degradation risk, and these issues continue today. This phase represents the era of neoliberal globalization and an emergence of future uncertainty in the world risk society. The neoliberal view of the future has come to dominate the futures field. Neoliberalism

can be defined as "a theory of political economic practices that proposes that human well-being can best be advanced by liberating individual entrepreneurial freedom and skills within an institutional framework characterized by strong private property rights, free markets, and free trade" (Harvey, 2005). It generally comprises economic policies to pursue the open market and privatization by minimizing the role of the state and maximizing the economic activity of market forces. The fragmentation refers to the loss of connections between the futures and futurists and the lack of disciplinary consensus on futures studies, as well as the diversity of futures studies. Moreover, this phase embraces the dominance of foresight, the advance of critical futures studies, and the intensity of fragmentation.

Foresight has gained ground and has become a fashionable term since the 1990s (Chuls, 2006; Major, Asch, & Cordey-Hayes, 2001). Irvine and Martin, in their book, *Foresight in Science: Picking the Winners*, use the term foresight to "describe strategic forward-looking technology analysis for policy-making" (Georghiou, Cassingena Harper, Keenan, Miles, & Popper, 2008). According to them, foresight is "to look into the longer-term future of science, technology, and economy and society with the aim of identifying the areas of strategic research and the emerging generic technologies likely to yield the greatest economic and social benefit" (Anderson & Jørgensen, 2004). Foresight has three major objectives: (a) "science and technology priority setting," (b) "the connectivity and efficiency of the innovation system," and (c) "shared awareness for future technologies, opportunities and strategies" (Anderson & Jørgensen, 2004; Barré, 2002). Foresight practices are extensively carried out in corporate, national, and civil foresight programs.

Corporate foresight is basically "futures studies for business" (Neef & Daheim, 2005) as it maintains "the analysis of long-term prospects in business environments, markets and new technologies, and their implications for corporate strategies and innovation" (von der Gracht, Vennemann, & Darkow, 2010). Many companies such as, Siemens AG, DaimlerChrysler AG, BASF AG in Germany, Lucent Technologies, 3M, GE, DuPont in the US, Nokia in Finland, or Philips in the Netherlands have carried out foresight activities within their own strategic (planning) departments or foresight divisions (Chuls & Johnston, 2006; Johnston & Bate, 2003; Marcus, 2009). Examples include Siemen's *Horiozons 2020: A Thought-Provoking Look at the Future* (Scharioth, Huber, Schulz, & Pallas, 2005), BMW's *The Future of Mobility* (IMR, 2002; IMR, 2005; IMR, 2008), and Shell's Energy Scenarios (Shell International BV, 2008; van der Veer, 2005). Corporate foresight uses patent analysis, literature analysis, scenarios, surveys, Delphi, and technology roadmaps (Chuls & Johnston, 2006). Scenarios and technology roadmaps are the best-known and most widely used methods (Chuls & Johnston, 2006).

National foresight is a form of large-scale national exercises in foresight activities in its implementation of foresight to focus on national interests and deal with national issues to support national economic, technological, and social development. Along with the growing literature of foresight study, many countries have conducted large-scale foresight on the national level (Grupp & Linstone, 1999). Since the Delphi activity in 1971, Japan has conducted a Delphi survey every five years (Major et al., 2001). Moreover, many countries have emulated the Japanese model of Delphi. Germany and France used the questionnaire of the Japanese Delphi and collaborated with the National Institute of Science and Technology Policy of Japan (Chuls, 2003; Heraud & Chuls, 1999). Foresight has become the most desired policy device. Foresight activities are still managed in Japan, the U.S., The Netherlands, Germany, France, the U.K., Italy, and Australia (Greisler & Stupak, 2007).

Civil foresight is the futures practice for a civil society. It is an area of foresight undertaken neither by corporate foresight, nor national foresight. Corporate foresight emphasizes the strategic formation dealing with the future impact on company profits. National foresight focuses on the priority setting of national policies. The purpose of civil foresight is to generate good civil society visions and is sometimes counterpoised with companies or governments. Civil foresight has been promoted by the growing civil society, global economic instability, and such pressures on environmental issues as global warming. Thus, the future of society needs the perspective of a civil society. The National Council of Voluntary Organizations (NCVO) in the United Kingdom introduced the Voluntary Sector Foresight Project to support voluntary and community organizations for better strategy and decision making (TSF, in press). The Carnegie UK Trust's publication, *The Shape of Civil Society to Come*, which is the report of the Commission of Inquiry into the Future of Civil Society, explores the future of civil society (Carnegie UK Trust, 2007). The Cardio and Vascular Coalition (CVC), which is an alliance of 41 voluntary sectors and professional organizations, produced *Destination 2020: A Plan for Cardiac and Vascular Health in 2009* (CVC, 2009).

The dominance of foresight in futures practice somewhat reflects the impact of neoliberalism on the field. Foresight results in part from the politicization of the neoliberal values in futures studies for serving policy preferences and specific interests even though it is the response to the lack of the practical application of futures studies. R. Slaughter believes that futures methods are used superficially and limitedly and the emergence of strategic foresight suggests the need for an applied focus in futures studies (Slaughter, 2002). Foresight emphasizes the priority setting in science and technology, the participation of policy making, and the formation of strategy as it is action-oriented and closely connected to strategic management. The practical utility of foresight is represented by reports of the World Economic Forum's world scenarios series (WEF, 2005; WEF, 2006a; WEF, 2006b) and the World Bank's global development horizon (World Bank, 2004; World Bank, 2006). The World Economic Forum's future visions are practical strategies for countries to empower their capitalist economic development and prevent the emergence of risk and crisis while the World Bank's global futures focus on a single economic vision with economic competitiveness and benefits. The core issues of the global future society consist of having it subjected the four following key driving forces: (a) demographic trends, (b) savings, (c) investment behavior, and (d) the role of technological change (World Bank, 2006). Both the World Economic Forum and the World Bank can be seen in the reformation-oriented modality for the strategic global perspective rather than the utopian commitment or deep structural transformation that brings about the substantial revision of the global capitalist order. These organizations have become more subject to the demands of the decision-making process, more oriented towards the provision of planning and

innovation tasks, and less concerned with the shared vision of a desirable human future and ideal values. Furthermore, they are organized by strategic imagination or strategic futures. The foresight dominant futures practice, or the belief that the main purpose of futures studies is to improve effectiveness and lead innovation, has had a negative impact on futures studies.

This market-oriented society will secure universal prosperity and hold good futures along with continuity and adaptation for strategic changes; however, the market-oriented future mentality tends to ignore other alternatives to contemporary global capitalism because the neoliberal view of the futures is closely related with the TINA (there is no alternative) and TANIA (there are no ideal answers) theses (Shell International BV, 2008). These meanings of the concepts appeared in the United States National Intelligence Council (NIC), the United Nations Environment Programme (UNEP), and Royal Dutch Shell. The NIC developed four scenarios respectively: 'Davos World,' 'Pax Americana,' 'A New Caliphate,' and 'Cycle of Fear' in *Mapping the Global Future* (2004) (NIC, 2004); 'A World Without the West,' 'October Surprise,' and 'BRICs' Bust-Up' in *Global Trends 2025* (2008)(NIC, 2008). UNEP's GEO3 and GEO 4 reports presented four alternative scenarios with different policy options: 'Market First, 'Policy First, 'Security First,' and 'Sustainability First' (UNEP, 2002; UNEP, 2007). The Royal Dutch Shell showed three global scenarios for 2025: 'Low Trust Globalization,' 'Open Doors,' and 'Flags' (van der Veer, 2005). The *Shell Energy Scenarios to 2050* offers two scenarios: 'Scramble' and 'Blueprints' (Shell International BV, 2008). All the aforementioned scenarios fail to envision the diverse and radical course of future development to pose the counter-neoliberal economic globalization. Thus, many results of foresight pursue a market-oriented future society and severely circumscribe the sphere of futures imagination and creativity.

Futurists focusing on foresight tend to show a lack of moral orientation for the public interests and future generations. The obsession with foresight promotes acceptance of a market-oriented future society. Such a market-oriented future can serve to benefit those in power. The practical utility of foresight can sometimes neglect the question of whose interests are gained by effective alternative futures. They circumvent value issues, marginalized people, inequality issues, freedom, and human rights that are striking evidences of how futurists have ignored the moral orientation of futures studies. The lack of moral orientation questions whether futurists are fair in their responsibilities for improving the quality of life for everyone. The foresight that lacks moral orientation moves its concerns to futures trends and events and structure and away from values, power distribution, and individuals. It is possible for futurists to stick to the client blindness that disregards the future value of others and contributes to specific organizations and classes. The practical utility of foresight tends to marginalize futures studies in relation to the moral commitment confronting humankind, a vision of a humane future, and the future of others. Futures studies must consider moral commitment because its existential rationale is associated with future generations for helping their needs. Moreover, it should pursue the moral value because the futures are developed by the relationship with others, not by an individual's sphere. In this context, futures studies suffer from an identity crisis. It can be accused of being subservient to strategic planning or management control. The dominance of management over the futures studies has been continually constructed. Futures studies has become a mere strategic tool of management planning, and as a result, loses its distinctiveness and is affiliated with a management science. This strategic tool metaphor weakens the futures community by confusing its disciplinary identity and endangers the status of futures studies as an independent discipline.

In response to the practical utility of foresight in the neoliberal vision of the futures, futurists are pursuing community-oriented alternative futures to obtain the objectives of foresight (Bezold, 1999; Blackwell & Colmenar, 1999; Ghişa, Goux-Baudiment, Dator, & Cole, 2011). For instance, Dator offers a systematic approach to community-oriented alternative futures by arguing that the main purpose of alternative futures or scenarios is to help "an organization or community plan for and move towards its preferred future" (Dator, 2009). Moreover, some futurists are focusing on relatively narrow and thereby manageable topics (de Almeidaa & Silvab, 2011; Roberts, 2010). The focus on community-oriented alternative futures and the small-scale approach is attributed to the consistent pressure on futures studies to become a pragmatist-oriented profession and supply instrumental modes of futures knowledge.

The advances of critical futures studies opened a new way for futures thinking in the era of the neo-liberal, risk, and post-modern society and were sometimes counterpoised with the dominance of foresight by representing the expansion of diverse perspectives within futures studies. The roots of critical futures studies can be traced to the work of van Steenbergen (critical futurology) (van Steenbergen, 1970), Galtung (democratizing future research) (Galtung, 1970), Tuchel (a critical rationalism) (Tuchel, 1970), and Miles (public or publicized futures) (Miles, 1975). Their futures studies criticized the existing capitalist society, the positivist tradition, and a colonized future by interests groups and focused on value-and more disjuncture-oriented futures, suggesting normative, equal, and participatory futures. The early critical futures studies was influenced by social critical theory and closely related with radical futures studies.

During the third phase, critical futures studies was developed by Slaughter (2004). Traditional futures approaches, such as prediction, forecasting, and scenario building, focused on the empirical and external. However, they overlooked the social construction of the future and symbolic functions. Instead, the critical futures studies stressed "the importance of the 'inner' meaning in understanding the 'outer' world" (Curry, 2007) and emphasized "the re-negotiation of meanings associated to future alternatives" and "emancipation from current power structure" (Arnaldi, 2008). Slaughter's critical futures studies came from Habermas and the hermeneutic tradition (Inayatullah, 1990). Although differing from Slaughter's approach, Inayatullah also made important contributions to the critical futures studies field. His approach was derived from Foucault and other post-structuralists and used deconstruction, analysis of power and critical discourse for examining how the future is constructed in the present discourses and how the future-related discourses shape the future (Inayatullah, 1990). He also developed the Causal Layered Analysis (CLA) to give a deeper

insight of current trends and problems, to look at different meanings of data and information, and to yield "transformative spaces for the creation of alternative futures" (Inayatullah, 1998). The CLA has four levels: the litany, social causes, structure and the discourse/worldview, and metaphor or myth (Inayatullah, 1998). There are various topics and areas by which the CLA are applied: business (Saul, 2002), demography (Terranova, 2004), education (Bussey, 2008; Gray, 2006; Milojević, 2005), environmental issues (Boyd, 2008), forestry (Ariell, 2010), and new approaches in social research (Grbich, 2004). The CLA is becoming popular and its applications are continuously increasing. Its multi-layered method complements different methods and provides various perspectives for the purposes of research. It also drives a deep insight of policies based on the dominant discourses.

Two additional core concepts of critical futures studies are power and futures reproduction. These concepts assume that the power of dominant socioeconomic groups has been reinforced through the reproduction of futures discourse because issues of power and futures control are worked out in the social system mechanism. Critical futures studies involve the critique of the neoliberal form of strategic/policy-oriented futures studies (Hursh & Henderson, 2011), the critique of power, inequality, and injustice (Hamm, 2010; Johanisova & Wolf, 2012), the support of construction approaches (Fuller & Loogma, 2009; Wright, 2004), the emphasis of language (van der Helm, 2006), feminist futures (Gunnarsson-Östling, 2011; McCorduck & Ramsey, 1996; Milojević, Hurley, & Jenkins, 2008), the critique of the existing social order (Brie, 2008; Johanisova & Wolf, 2012), and the critical scenario method (Cairnsa, Śliwab, & Wright, 2010).

As mentioned previously, futures practice tends more to serve specific projects and organizations for developing their survival and success than to aid the general public or society for developing their common goods. This trend has resulted in the focus on the individual or institutional visions of the future rather than on the vision of humanity's future as a whole. Furthermore, the current chaos, complexity, and risk in the world have to deal with the high uncertainty of the future. Yet futures practice encourages the understanding of complex, nonlinear, and unpredictable futures, detecting unknown opportunities and threats, and how to prepare for discontinuities. This trend has led to a proliferation of contesting future images. Thus, futures studies is more fragmented than at any time in its history. The fragmentation of futures studies includes the lack of consensus on the study of futures, and an increasing number of subfields.

Despite its dramatic development over the last several decades, futures studies has suffered from a lack of consensus about what futures studies is and its overall purposes. For example, the futures terminology has been applied in various ways according to region, time period, and group: futures studies, futures research, foresight, futurology, future movements, futuristics, futuribles, prognostics, futurism, futuring, etc. Hence, there is no consensus on the precise term of study of futures. The lack of standardization of terminology reflects that futurists have yet to reach a general agreement of what futures studies is. Furthermore, futurists are called different names: futurologists, prospectivists, foresight practitioners, and horizon scanners (Sardar, 2010). Masini (1993) offers some reasons why futures studies is diverse in its terminology: "contrary to other disciplines, there is no universally accepted terminology of Futures Studies, which may be because it is a relatively new discipline or that the common agreement on a single theory has yet to be concluded." Thus, the debate over the nature and terminology of futures studies has taken place among futurists (Bell, 2002; Marien, 2002). Marien goes so far to reject the term 'futures field'. He argues that futurists do not share "a common academic background" and it is extremely fragmented (Bell, 1997a; Marien, 1985). Instead he calls it a "multifield (Marien, 1985; Marien, 1996), or "a very fuzzy "multifield," or "the key integrative core" (Marien, 1996). His critique of the futures field goes beyond terminology preferences, but instead focuses on the lack of its coherent and rigorous researches: "Nor have I ever seen any agenda for how FS could become more of a 'field', or a stronger field. Rather, I suspect that statements about a 'field' are made unconsciously in the hope that calling it a 'field' will make it so" (Marien, 2002). Contrary to Marien, Bell believes that futures studies share the same background. He defines 'field' as "an intellectual endeavor or a sphere of activity or interest, especially within a business or profession" (Bell, 1997a). He argues that it is not necessary that futures studies should be "unified" or "well established" to become a field. In fact, he contends that futures studies is 'alive and well' and most futurists have a consensus on the scope and purposes of futures studies such as "investigation of possible, probable, and preferable futures" and that there are wide agreements such as the importance of "past trends and current changes" (Bell, 2002). Moreover, he states, "All fields of inquiry today have a strong tendency toward fragmentation and, compared to some other fields, futures studies is no more, and perhaps less, fragmented than others" (Bell, 2002). According to Bell, the fragmentation is no more than a criterion of whether futures studies is a distinct field.

Although the futures field appears to lack consensus, there is a way to discern its diversity. Futurists and practitioners deal with future-oriented topics within their own conceptual framework. Futures studies has formed several subfields, each differentiated from others in terms of specific topics, perspectives, and techniques. The subfields of futures studies are confusing and overlapping due to the various principles of division. For instance, foresight, as aforementioned, focuses on a strategic-oriented, looking forward study of futures. Foresight practitioners add a strategic planning dimension to futures studies: a dimension, to a large extent, lacking in traditional futures studies. Foresight is further divided into transnational foresight (Crehan & Harper, 2008), national foresight (sometimes called public foresight) (Portaleoni, Marinova, Ul-Haq, & Marinov, 2013), regional foresight (sometimes called territorial foresight or regional territorial foresight) (Clar & Destatte, 2006), corporate foresight (sometimes called company foresight) (Portaleoni et al., 2013), sectoral foresight (Karasev & Edelkina, 2013), environmental foresight (Bengston, Kubik, & Bishop, 2012), and open foresight (Daheim & Uerz, 2006). Open foresight, for example, focuses on the concept of open innovation (Daheim & Uerz, 2006). The increasingly differentiated subset of foresight is not the foresight outcome, but rather the players, objects, and regional scope of foresight activities.

Technology forecasting has played a significant role in any future-related exercise, including the formation of innovation and policy systems. Technology forecasting is usually called future oriented technology analysis (FTA), which is "an umbrella concept to encompass the wide variety of technology-oriented forecasting methods and practice" in a very general sense (Johnston, 2008). The term FTA branches to other different forms that express its multifaceted attributes, such as technology monitoring, technology watch, technology alerts, technical intelligence and competitive intelligence, technology forecasting, technology roadmapping, technology assessment, and technology foresight (Firat, Woon, & Madnic, 2008). Furthermore, technology practitioners have changed the concept of technology forecasting, focusing on the potential development of technology and science, into technology foresight, integrating economic, social, and environmental dimensions (Jin, 2011). Technology assessment puts emphasis on "the likely or already observable effects of new technologies" (UNIDO, 2002).

The proliferation of these subfields is accelerated by the growing process of specialization. This means that futures practice can be applied to all specialized subjects and the tendency of growing subfields is a natural consequence of the increased interaction between different disciplines. Futures studies has displayed deeper knowledge through its interaction with other disciplines. Moreover, the progress of specialization has brought the bifurcation in the field, and traditional futures studies has been separated by foresight. For example, the Canadian Association for Futures Studies (CAFS) changed its name to Foresight Canada (Sardar, 2010). Even more, new periodicals and organizations make futurists or future-oriented scholars responsive to the foresight vogue. Several new periodicals include the *International Journal of Foresight and Innovation Policy*, which was founded in 2004 that aims to deal with the "knowledge creation, diffusion and utilization in innovation policy" (WFSFW, in press). *Foresight: The Journal of Future Studies Strategic Thinking and Policy* was published in 1999 to "demonstrate more clearly the utility of clear thinking about the future in shaping decisions in business and government" (Blackman, 1999) and stands on the middle range approach aimed at integrating "highly mathematical forecasters" and "all manner of visionaries" (Blackman, 1999). In 2009, the World Future Society created a new journal, *World Future Review: A Journal of Strategic Foresight*, incorporated by Futures Research Quarterly and Future Survey. In addition to periodicals, organizations such as Slaughter launched in 1999 the Australian Foresight Institute to "create the next generation of foresight practitioners in Australia" and "support progress toward what we termed 'social foresight' (Slaughter, 2006). The University of Houston at Clear Lake's Futures Studies program transferred to the University of Houston-Downtown in 2005 and then changed its name to the Foresight program. Regent University also established a Master of Arts in Strategic Foresight degree in 2006.

As to the fragmentation, the third feature is the contesting futures images based on the popularity of the great transition thesis. The discourse of the new millennium made international efforts to recognize the global futures, especially the great transition. Raskin and his colleagues in the Global Scenario Group believe that human history is encountering a new type of transition, 'the planetary phase of civilization' (Raskin et al., 2002). The powerful images of the global future are largely linked to globalization, the progress of ICT, and the global crisis. Global future images range from specific issues (global warming or terrorism), to entire global societies, or to negative images or positive images. The Global Scenario Group presented three global future scenarios: 'Conventional Worlds, 'Barbarization,' and 'Great Transitions' (Gallopín, Hammond, Raskin, & Swart, 1997). These scenarios respectively imply a continuation of the current situations, fundamental social change and collapse of civilization, and fundamental social transformation and evolution to a higher stage.

Global future images can be divided into three categories: (a) optimistic global futures, (b) pessimistic global futures, and (c) sustainable global futures. Optimistic global futures are based on the global free-market economy and advanced technology for prosperity and opportunity and closely related to the neo-liberal global futures. Global economic organizations, such as IMF, the World Bank, and WTO, play an important role. The neo-liberal vision of a borderless world for capital is the main theme in this optimistic growth position (Pieterse, 2000) and expressed in "Kenichi Ohmae's *The Borderless World* or the world as duty-free store" (Pieterse, 2000). Optimistic global futures are represented by the following scenarios featuring technologization and globalization: the Dutch Central Planning Bureau *Scanning the Future* 'Global Shift' scenario (Dutch Central Planning Bureau, 1992), OECD's *The World in 2020: Toward a New Global Age* (OECD, 1997). Hammond's 'Market World' scenario (Hammond, 1998), the Intergovernmental Panel on Climate Change (IPCC) SRES 'A1' scenario (Nakicenovic & Swart, 2000), the United States National Intelligence Council *Global Trends 2015* 'Inclusive Globalization' scenario (NIC, 2000), and Gallopin and Raskin's 'Market Forces' scenario (Gallopin & Raskin, 2002).

In contrast to the optimistic global futures rhetoric, pessimistic global futures are based on the complete discontinuance of current situations due to conflict, poverty, natural disasters, natural resources exhaustion, pandemic diseases, and economic crisis. Journalist Kaplan's *Atlantic Monthly* article entitled "The Coming Anarchy" (1994) and Klare's book *Resource Wars* (2002) reveals a pessimistic collapse position that rising population and resource scarcity will result in turmoil such as disease, civil instability, and violence (Peoples & Vaughan-Williams, 2010). Many pessimistic images are closely related to the claims against neo-liberal globalization as seen in Rifkin's *The End of Work* that addresses that new technology will destroy the world economic infrastructure and the computers will replace human labor resulting in 'jobless growth' (Lee, 2009; Pieterse, 2000). Other examples include Daly and Cobb's 'environmental risk', Greider's 'the risk of global oversupply,' and Attali's 'tensions between the market and democracy' (Pieterse, 2000). The pessimistic global futures are represented by the following scenarios: Allen Hammond's 'Fortress World' (Hammond, 1998), Gallopin and Raskin's 'Barbarization' (Gallopin & Raskin, 2002), and the Dutch Central Planning Bureau *Scanning the Future* 'Global Crisis' (Dutch Central Planning Bureau, 1992).

The third image, a sustainable global future, is linked with a conserver society that will stimulate "decentralization, self-reliance, sustainability and harmony of man within nature" (Hancock, 1980). Sustainable global futures are competing with

images of the neo-liberal perspectives for future development. There are generally two different approaches for sustainable global futures (Morita et al., 2001). The first is for 'low consumption' to promote a conservers' society to reduce consumption as evidenced in Ted Trainer's *The Conserver Society: Alternative for Sustainability* (1995) (Trainer, 1995). The second is a 'our common future' thesis to increase economic activity for improved equity and environmental quality as seen in following scenarios: the Dutch Central Planning Bureau's *Scanning the Future* 'Balanced Growth' (Dutch Central Planning Bureau, 1992), Hammond's 'Transformed World' (Hammond, 1998), World Business Council for Sustainable Development (WBCSD) Global Scenarios 2000–2050 'Jazz' scenario (WBCSD, 1998), the Intergovernmental Panel on Climate Change (IPCC) SRES 'A2′, 'B1'and 'B2′ (Nakicenovic & Swart, 2000), and Gallopin and Raskin's 'Great Transition' (Gallopin & Raskin, 2002).

5. Conclusion

Modern futures studies began shortly after the end of World War II and since then a wide range of futures studies literature has been developed. However, the intellectual scholarship of futures studies has been continually changing. There has been considerable contention over how the purpose and nature of futures studies should be defined, a contention that is more than a difference in terminological preference. Most historical accounts cannot cover all of the diversity in the exercise of futures studies. Of all the historical narratives confronting this field, this paper tracks the development of futures studies as it occurred via the intellectual tradition and three distinct periodizations (see Table 1).

Above all, this paper introduces five intellectual traditions by looking at the philosophical and historical context that informed the very foundations of futures studies. Religion provided futures studies with antihumanistic and predetermined tendency; the utopian tradition allowed futurists to develop normative and preferred futures; historicism helped to pave a path to form deterministic and evolutionary perspectives; science fiction provided the backdrop of imaginary alternative futures that dramatically envisions fantastic ideas; systems thinking enabled the multifaceted development of futures studies such as interdisciplinary epistemology, the concept of future control, systematic methodological approach, and the postindustrial transformation thesis.

Moreover, this paper proposes the three-phase periodization. The first phase was the era of scientific inquiry and rationalization of the futures (1945 – the 1960s). It involves the prevalence of technological forecasting as a key approach, the rise of alternative futures in systematic ways, and the growth of the professionalization of futures studies. The emergence of futures studies as an intellectual movement is a general rationalization of all aspects of futures thoughts and practices. The concept of the science of forecasting, and alternative futures as a systematic technique represented a paradigm shift in futures practices away from an idea of the traditional utopia, grandiose evolutionary approach, naive prophecies, science fiction, religious attitudes, and mystical orientation. In particular, scientific methods, including advanced empirical research methods, led futures studies to new modes of futures knowledge. Futures studies began to define its discipline identities with new terminologies and its institutionalization for its professionalization. The institutionalization of futures studies was associated with the form of organizations, conferences, and research institutes and periodicals for pursuing the well-developed body of knowledge on futures practice. Thus, the professionalization of futures studies increased the influence of futurists over the decision-making process and social institutions by strengthening the authority of futures thought and obtaining recognition for distinctive profession.

The second phase was presented as the era of global institution and industrialization of the futures (the 1970s – the 1980s) marked by the rise of world-level discourse on global futures, the development of normative futures, and the deep involvement of the business community in the futures thinking. In the first half of the 1970s, the pessimistic message of the *Limits to Growth* and the oil crisis brought new global institutional norms and serious questions regarding the dominant discourse of unlimited growth. Two important developments occurred: (a) the creation of global debates about future

Table 1
The intellectual tradition and three-phase periodization of futures studies.

Periodization	Distinctive characteristics
Intellectual tradition	Religions, utopias, historicism, science fiction, and systems thinking.
The scientific inquiry and rationalization of the futures: 1945 – the 1960s	• Prevalence of technological forecasting as a key approach. • Rise of alternative futures in systematic ways. • Growth of professionalization of futures studies: establishment of distinctive boundary and institutionalization. • Diffusion of science as the basis for development of foundations of futures studies.
The global institution and industrialization of the futures: the 1970s – the 1980s	• Rise of world-level discourse and activity concerning global futures. • Development of normative futures. • Deep involvement of the business community in the futures thinking. • Turn to managerial perspectives on futures thought development.
The neoliberal view and fragmentation of the futures: the 1990s – the present	• Dominance of foresight.• Advance of critical futures studies. • Intensification of fragmentation: the lack of consensus, the proliferation of subfields, and the tension between contesting future images. • Marginalization of futures studies in relation to the moral commitment and vision of humanity future, moving toward community-oriented alternative futures and manageable topics.

between the neo-Malthusian pessimists and technological optimists, and (b) popularity of scenarios. Moreover, the diffusion of the discourse of the postindustrial society became widespread to address the future role of information and services in the development of normative futures. A key characteristic of this phase is that futures studies was embedded within corporations' the decision-making and planning processes. Crucial attention was paid to both how to change managements' mindset and understand the demand of market places in the managerial orientation. The industrialization of futures showed growing futures studies-industry ties and raised the future-oriented thoughts of business decision makers.

The third phase was the era of the neoliberal view and fragmentation of the futures (the 1990s – the present). This current phase is taking place in the time of neoliberal globalization and risk society discourses and is characterized by the dominance of foresight, the advance of critical futures studies, and the intensification of fragmentation. The apparent neoliberal view of the futures is mirrored in the dominance of foresight that emphasizes the effectiveness and innovation of the decision-making process. The predominant foresight scenario has changed the framework of questions regarding the futures approach into how to improve organizations and their strategic planning. The primary criteria of whether viable alternative futures are also assessed by the possibilities of economic gains and management goals. Furthermore, the futures community's reliance on foresight tends to ignore other feasible alternative futures against the current global capitalism system and in turn marginalize futures studies regarding the moral commitment and vision of humanity's future generations. The focus of futures studies is being replaced by community-oriented alternative futures, and futurists are tending to limit their topics to a manageable focus. Thus, the dominance of foresight is intricately connected with the present identity crisis of futures studies. On the other hand, the advance of critical futures studies is a natural reaction to the dominance of foresight and traditional or mainstream futures approaches. Critical futures studies focus on the critique of official futures, radical transformation of the existing order, and the emphasis on value and power relationships. Lastly, futures studies has tended to fragment due to the lack of consensus, the proliferation of subfields, and the tension between contesting future images. That said, the fragmentation trend can be understood as a specific sign of the expansion of futures knowledge that can contribute the profusion of new form of futures studies. Unfortunately, disciplinary fragmentation in futures studies can be seen as a field of incoherent knowledge.

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