

Politeia's collegial, high-technology spherical structure

Nicholas C. Georgantzas
Professor, Management Systems
Director, System Dynamics Advisory
Fordham University Gabelli Business School
113 West 60th Street, Suite 617-D
New York, NY 10023-7484, U.S.A.

Tel.: +1-917-667-4022 | Fax: +1-212-765-5573 | E-mail: georgantzas@fordham.edu.

Abstract. If the core tenet of system dynamics (SD) is true, i.e., that system structure drives system performance through time, then politeia's emergence and evolution into a collegial, high-technology spherical structure might turn out to be our civilization's highest technological achievement. Sporadic incidents in Homer's works mark its initial emergence, while this self-managing human system's cultural, economic and socio-political aspects tread to the Fall of 322 BCE. Looking at both its magnificent performance, when its self-governance was fully functional, and its brutal murder by the despotic, pseudo-aristocratic or *swanky* regime, allows comparing politeia's collegial, spherical decision-making structure to the ubiquitous but highly problematic, in our neo-postmodern temporality, pyramidal hierarchy of central authority and power. Doing so unveils a business proposition toward collegial, dynamic interventions, which entail focusing on civic, ethical and moral ideals, as the means to creating in business and industry the conditions necessary for the emergence of politeia's collegially spherical decision-making structure, an innovative act of high-technology self management.

Keywords: authentic democracy, collegiality, participative decision making, politeia, political system, polity, pyramidal hierarchy, regime, self management, spherical structure, tyrannical particracy.

1. Introduction

Even if classical Hellas is less known than its goddesses, gods and myths, its philosophy or even its military affairs, technology too is a crucial aspect of its history. Seen as a human system, hellenic civilization, much like every other society-specific culture, can never be approached without an insight into the cultural and socio-economic phenomena of its evolutionary phases.

Naturally, these phenomena include its *pioneering* economy and technology (Karayannis 2007). The *Fountain of Megara*, for example, the ancient *Dam of Alyzia* and the *Eupalinos' Tunnel of Samos* are hellenic-civilization's technologies, firmly embedded in its cultural and socio-economic politeia phenomenon, in the classical-Hellas era.

Linked to politeia's evolutionary phases is yet another phenomenon called 'ανάδυσσις' or *emergence*. It describes the new features that emerge from the mutual interaction among a system's parts, which are not the features of any particular *one* of the system's individual parts.

According to this gestalt, a whole is greater than the sum of its parts. A concrete example is that of water or H₂O: its emergent 'wetness' is not a property that one can see in either its hydrogen (H) or its oxygen (O) parts.

Ceteris paribus, one could forever study the H and the O in isolation, but never encounter the characteristic of moisture. Sogginess is a feature that emerges from the mutual interaction of H and O, once combined to form the molecular structure we call «water».

One must study the whole system, in order to perceive its moisture. Looking only at the system's parts, i.e., H and O, one can neither form the appropriate notion of water as a natural system, nor of its emergent properties.

This approach to studying systems is antithetical to ‘analysis’, which breaks things into smaller pieces, in order to simplify studying them. *Analysis* brings with it the risk of potentially missing essential characteristics of a system under investigation and, possibly, arriving at an insight about the system that is rather pitiable.

Analysis certainly is important but, suddenly, another study method is called for: ‘anasyntesis’. *Anasyntesis* or recombination entails studying both the whole as well as the parts of a system, in order to develop an estimable level of insight about it and its systemic properties.

The present anasyntesis of the politeia phenomenon as an ‘αυτοποιητικό’ or «autopoietic» (Zeleny 1977), high-technology (Zeleny 1986), self-managing human system begins with politeia’s definition by Aristotle. Then, Zeleny’s definition of technology follows naturally, as a spherical unity of socio-political relations and relationships (1986).

Together, the hellenic ideal of ‘Aesthetics’, the definitions of the notions of ‘Art’ and ‘Logos’, and the incorporation of ‘Technology’ within the socio-economic and cultural context of an «emergent strategy» (Mintzberg and Waters 1985) lead to politeia’s designation as a «high-technology» (Zeleny 1986) human system. Managing politeia as a high technology requires not only that is collegially self-managed by a human society, but also in a way that is vastly different than today’s pyramidal hierarchy, i.e., today’s conventional but highly problematic institutional form, which has been most ubiquitous in our neo-postmodern temporality’s recent past.

The daily propaganda on all mainstream media today is that we all live and work *in* and *about* a real polity or political system, rather than *under* the pyramidal hierarchy of a despotic, pseudo-aristocratic or *swanky* regime, akin to *oriental despotism*. Moving forward, however, our world’s future, with its hellenic-culture nuggets, collegially concerns us all: our sustainability, ideals and the pursuit of our common interests require us both to jointly create the conditions necessary for politeia’s emergence and to jointly run our business, industry and politics as high-technology, self-managing human systems; no wonder Melissaratos and Slabbert (2009) urge America to reclaim its hellenic roots.

In its normative sense, the core tenet of system dynamics (SD), i.e., that system structure drives system performance through time, urges both business people and researchers to shift our focus from one-time events to through-time performance patterns and to system structure. The structure of a system entails all its invisible cause-and-effect relations that form feedback loops or spirals, which drive the system’s behavior through time (Meadows 1989, Sterman 2000, p. 16).

Yet the *conventional-institutional form* of the despotic regime’s pyramidal hierarchies, *under* which all of us live and work, seem to always do precisely the opposite. They not only ignore societal-system structure and its dynamics, i.e., through-time performance patterns, and thereby focus on one-time events, but they also seem to transform time into ugly, punctuated disequilibria, as they create sharp discontinuities in our business and industry (Georgantzias 2014).

Centuries before our neo-postmodern temporality, as political beings, people collegially wove the necessary conditions for politeia to emerge and to evolve into a high-technology human system, *in* and *about* which people can live, create, recreate and play in utter bliss or *eudæmonia*. Since then, countless studies have looked at alternative ways of societal organization, seeking positive results, a canon seemingly formed by the ways our human, society-specific cultures are affected, each embedded within its broad or narrow economic, political and societal environments.

Politeia’s present anasyntesis as a high-technology human system contributes to this quest by unveiling another side of our frequently-shocking human adventure. Its contribution rests on the disclosure of documented empirical evidence about an *autopoietic* (Zeleny 1977), high-technology (Zeleny 1986), self-managing human system, which once shone in its great interconnectivity splendor, long before the current, high-technology boom.

In its every step, the contribution’s leverage has been an intentional purposefulness to clarify all the pertinent notions used. Regardless of the topic under investigation, it is always vital to

clarify all pertinent notions because, due to its fuzzy nature, in its everyday practice, either deliberately or unwittingly, human language perennially distorts them.

2. Defining politeia

Politeia emerges and evolves into a pioneering, high-technology human system through either *full* or *partial* dynamic changes. A balancing, full-change spiral kills politeia (right, Fig. 1), by degrading it into a sedimentary one (left, Fig. 1), i.e., by moving from a true polity or political system that supports politeia (lower right, Fig. 1), to the pseudo-aristocratic or despotic regime of central authority and power (lower left, Fig. 1): «ὅπως εκ της καθεστηκυίας άλλην μεταστήσωσιν» (so as from the established one to make another: Aristotle, *Politics*, 1301β, 7-10, cf Contogeorgis 1982).

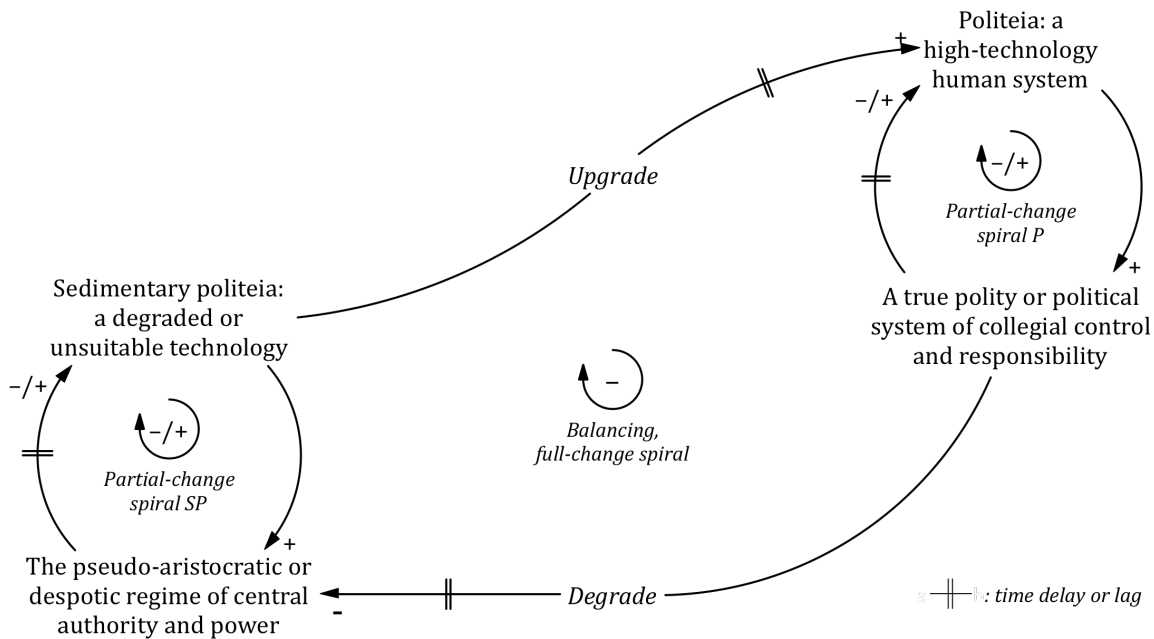


Figure 1. The full- and partial-change spirals that either degrade or upgrade politeia.

Such a drastic, full change has been the primal cause of our current political problematic, since our human species has been trapped *under* the despotic regime’s pyramidal hierarchy of central authority and power for the last 2,337 years. Specifically, since the Fall of 322 BCE, when politeia’s murder is accomplished via the violent implementation of the Lamian-war treaty, which degrades Athenians’ true polity into a ‘*τιμοκρατία*’ or *tariffs-republic for the very rich*.

It is possible to emerge fully out of our miserably sedimentary politeia (left, Fig. 1). This we can achieve through a process of upgrading to politeia, i.e., liberating ourselves from the despotic regime by rendering it obsolete, i.e., upgrading out of the despotic regime’s tyrannical participacy, into a true polity or political system, e.g., that of a *partial-representation system* or that other, elusive one: Athenians’ *authentic-democracy system* in classical Hellas.

It is, therefore, in the case of a balancing, full-change spiral (center, Fig. 1), either about politeia’s degradation or about a political process that rectifies it. In both cases, what makes the difference is either the absence or the presence of a true polity or political system (Fig. 2b), capable of supporting politeia as a high-technology human system, and the absence or presence of the despotic regime’s pyramidal hierarchy (Fig. 2a), which can only support a sedimentary politeia.

A true polity or political system, capable of supporting politeia as a high-technology human system, still is a ‘system’, which Forrester defines as a unity of parts that collegially work together,

through their mutual interactions, toward their common interests (1971, p. 1-1). Indeed, a system is a unity of parts that maintain their unity through their *mutual interaction*, i.e., something collegial happens among its parts, which maintains the system through time.

Whether human or not, a system is much more than a collection, a heap or a pile of parts. Yet the despotic regime's pyramidal hierarchy of central authority and power (Fig. 2a), which can only support a sedimentary politeia, aims at fulfilling *not* any common interests, but only the *personal* interests of its despot(s) or tyrant(s) (Contogeorgis 1982, p. 20), e.g., see today's tyrannical particracy.

Critical thinking renders obsolete the despotic regime's pyramidal hierarchy of central authority and power (Fig. 2a), as seen, for example, in the tyrannical particracy. A true polity or political system, which supports politeia via its collegial, spherical decision-making structure of *by-lot-selected* and *by-vote-elected* archons (Fig. 2b), not only boosts critical thinking, but also meets the *crucial condition* that renders viable both the true polity itself and the politeia it supports:

*every person who rules other people
is concurrently ruled by their collegiality.*

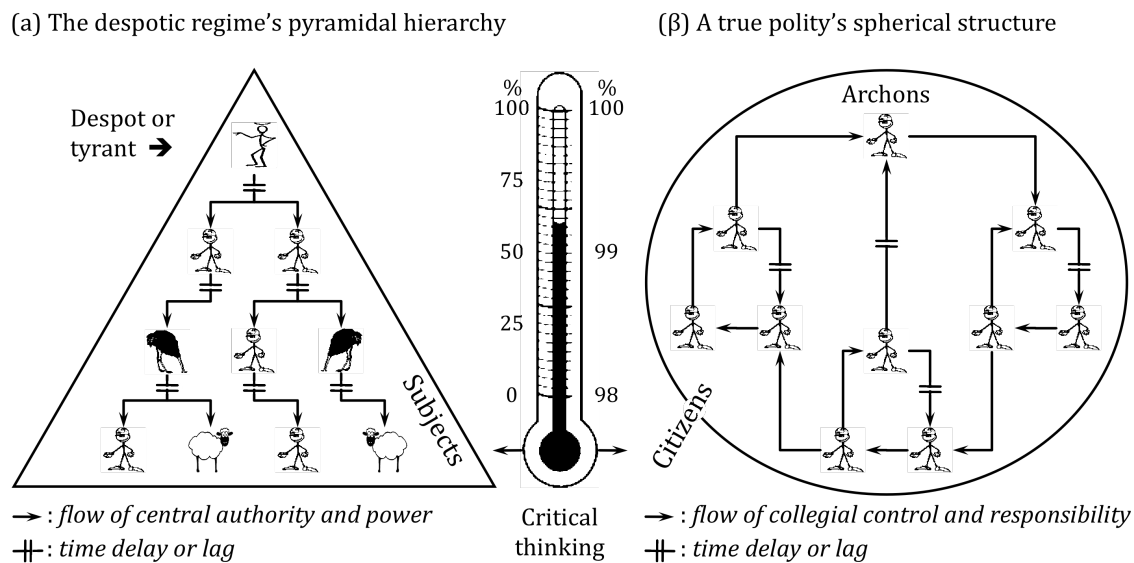


Figure 2. High critical thinking renders obsolete the despotic regime's pyramidal hierarchy.

Aristotle is crystal-clear that no tyranny can ever truly support business and industry, let alone politeia. Tyranny is a brutal, despotic, totalitarian regime, aimed at fulfilling not people's common interests, but only the personal interests of its tyrants. No tyranny ever distributes public material and political goods among its subjects, but always bestows these exclusively on its despots.

Within politeia (*P*), it is possible to enact the partial-change spiral *P* (right, Fig. 1), simply by replacing a group of archons, for example, in a transition from one true polity or political system of collegial control and responsibility to another, e.g., from the true polity of a *partial-representation system* to the equally-true polity of a *full-representation system*, with politeia's institutionalized 'δήμος' or *dēmos* (~municipality) always at its helm.

Also possible is a partial change of a politeia's portion, such as, for example, either in the abolition or in the formation process of a sovereign ruling post. Such was the case, for example, in the Spartans' politeia, when Lysander attempted to abolish its royal wont, while king Pausanias in turn attempted to abolish Spartans' institution of the *five* Ephors (Contogeorgis 1982, p. 20).

Similarly, it is possible to see enacted, within a sedimentary politeia (*SP*), the partial-change spiral *SP* (left, Fig. 1). That might simply entail either the replacement of a despotic regime's central-authority-and-power dude or the transition from one despotic regime to another, e.g., from the dark-ages' feudalism to the equally tyrannical particracy, which all of us witness daily, since the *Democratic-Republican* party's formation, i.e., the *one, single* party that Thomas Jefferson and James Madison formed between 1791 and 1793.

On Fig. 1, whether an observed change concerns a full change in politeia or a partial change, either in politeia (*P*) or in the sedimentary one (*SP*), it hinges on politeia's definition by Aristotle:

«πολιτεία μὲν γὰρ ἐστὶ τάξις τοῖς πόλεσιν ἢ περὶ τὰς ἀρχάς, τίνα τρόπον νενέμηνται, καὶ τί το κύριον τῆς πολιτείας καὶ τί το τέλος ἐκάστης τῆς κοινῶνίας ἐστίν» (Aristotle, *Politics*, 1289a, 15-18, cf Contogeorgis 1982) or: politeia is about the structure of the sovereign ruling posts in cities, i.e., how they are distributed, and which is politeia's dominant societal element, and what is the true end or entelechy for its society (Contogeorgis 1982, p. 17).

Three are the crucial elements in the above definition:

- a) the way of distributing political goods among its citizens, i.e., politeia's sovereign ruling posts,
- b) the nature of politeia's dominant societal element and
- c) its civic society's entelechy, tightly coupled to politeia's *purposefulness* (Ackoff 1994, pp. 25, 27, 45, 54, 72).

The political jargon of the 4th century BCE, about the specific manner of «νενέμηνται» or *distributing* politeia's sovereign ruling posts among its citizens, especially shows each *priority* set and every *proviso* made, so that its society's members *equally* enjoy the proceeds of honor from their collegial participation in their politeia's self-governance (Contogeorgis 1982, pp. 17, 45, 77, 113). And as far as «το κύριον» or *the dominant* societal element is concerned, what is actually the civic society's portion that holds politeia's sovereign ruling posts?

Politeia's by-lot-selected, pre-qualified representatives, who fill most of its sovereign ruling posts, as opposed to its few delegates elected by vote, constitute a unique singularity in the politeia of the 5th and especially the 4th centuries BCE. Politeia's dominant societal element also owns, and in an exclusive way at that, politeia's sovereign ruling posts.

The societal body of «πολίτες-οπλίτες» or *citizens-hoplites*, who participate fully in politeia's self-governance, *temporarily* serve on politeia's sovereign ruling posts, mostly as its pre-qualified representatives selected by lot or as its pre-qualified delegates elected by vote. And those citizens-hoplites have nothing to do with modernity's French 'citoyens' (Contogeorgis 1982, p. 18).

Politeia's citizens-hoplites are: the societal body that both rules and is concurrently ruled by politeia's *temporary* archons, its true polity or political system supporting their politeia, and *one* with their collegial society that *fully* possesses politeia's sovereign ruling posts, even if *temporarily* serving on them. Hence, as Aristotle consistently shows in his *Politics* book, the citizens-hoplites' true polity or political system of spherical self-governance *coincides completely* with their politeia (Contogeorgis 1982, p. 18).

Within this cultural and socio-economic context and subtext, the purposefulness that the citizen-hoplite society chooses necessarily differs, hinged on the societal class that might *temporarily* dominate politeia's sovereign ruling posts. Collegially, however, all politeia's classes, depending on their peculiar anthropocentric, moral and sociocentric stance, pursue their common eudæmonia (~bliss) and their common economic prosperity, through different polities or ways of life (Contogeorgis 1982, pp. 18-19).

3. Defining technology

‘Τεχνολογία’ or *Technology* is a statically complicated and dynamically complex human system. It has a lot to do both with ‘Τέχνη’ or *Art* and with ‘Λόγος’ or *Logos*.

Art leaps out of ‘Αισθητική’ or *Aesthetics*, one of the *four* civic, ethical and moral ideals that at once drive and support most of our civilization’s society-specific cultures, along with ‘Αλήθεια’ or *Truth*, ‘Αρετή’ or *Virtue* and ‘Αφθονία’ or *Abundance* (Ackoff 1994, pp. 49-50). But it’s civic ‘Αρμονία’ or *Harmony* that binds together our other *four* ideals.

3.1 Aesthetics

ΑΡΜΟΝΙΑ ΑΦΑΝΗΣ ΦΑΝΕΡΗΣ ΚΡΕΙΤΤΩΝ
(Harmony obscured is mightier than the apparent one)
Heraclitus 26(54)

The Aesthetics ideal embodies all the qualities of sensual phenomena, which, once perceived, they manage to meet an intimately harmonic arrangement is us. With ratios specific to the proportions that our human spirit forms, suddenly, Aesthetics discloses an absolute, eternal Truth.

3.2 Art

The mission of Art is the education of enthusiasm
Louis Aragon

Derived from the verb ‘τίκτω’ or *give birth to*, ‘Τέχνη’ or *Art* is the interest earned, an autonomous new entity created by the commingling of the external to us geometry of Nature and the artists’ secret, non-detectable, intimate spiritual geometry. Modifying the data of the *former*, the artists’ *latter*, inner geometry weaves trends toward a higher reality, motion and rhythm, thus overcoming our addiction to and limitations of matter, often bypassing the general autonomy of the cognitive processes in us that our mathematical logic fathoms.

3.3 Logos

- a) The means of communication among people, i.e., language or speech, the *linguist's* domain,
- b) the cause(s), leading to a situation’s effect(s), i.e, Sterman (2000, pp. 12-14),
- c) the logic that builds people’s critical thinking (Sterman 2000, pp. 14-39) and
- d) the ratio, expressed as a fraction, i.e., x / y .

Complicated indeed, Logos’ meaning is very difficult for people who have not yet mastered either the hellenic language or at least the language of mathematics. To give but one example, Logos as a ratio, i.e., (d) above, could be an economy’s productivity or the fraction: output / input.

But especially in today’s Hellas, i.e., a protectorate also known as ‘Greece’, the tyrannical-particracy members have the effrontery to frequently talk about some «productivity rise» in the economy *under* their despotic, particracy regime, allegedly achieved through a reduction in input cost, i.e., in the fraction’s *denominator*, which includes, for example, people’s pensions and salaries. They forget, however, that through a drastic reduction in people’s pensions and salaries, «austerity» they call it, these tyrannical-particracy members reset, if not completely reverse, the fraction’s *numerator*, i.e., the economy’s output rate.

3.4 Technology: a human system

In defining technology, it is utterly useless to speak of «the applications of science», «the entire body of materials and methods», «a list of features» or «cost-benefit analyses». Technology has *four* clearly-defined parts (left, Fig. 3): *brainware*, *hardware*, *software* and *support net* (Zeleny 1986).

Brainware concerns the whole design, evaluation and implementation, vying to achieve technology's purposefulness, through its equipment or hardware, software and support net. It thus has to do with knowledge of the 'what' and the 'why' or the 'know-what' and the 'know-why' of technology: what resources must be deployed, how, when and why?

Hardware refers to the design of the physical-logical equipment, as instruments for conducting the necessary controls, required to meet technology's purposefulness. The hardware does not only concern components' actual physical structure, but also their logical layout.

Software is the set of algorithms, guidelines and rules required for properly using the hardware, in the form of agreements, programs and rules of behavior and usage. It is the 'know-how' of technology: how to perform the tasks needed to fulfill its purposefulness.

The support network or net is the *fourth* and perhaps the most crucial aspect of technology; the net contains technology's first *three*, clearly-defined parts: brainware, hardware and software. It is the statically complicated and dynamically complex network of all informational, physical and socio-economic *relations*, which support the proper implementation and operation of a particular technology, according to its purposefulness. The net also consists of a technology's necessary administrative, cultural and organizational *relationships*: job content and roles, skill requirements, work rules, all official and unofficial workplace agreements, culture and management types, organizational-structure patterns, standards and measurement instruments, and so on.

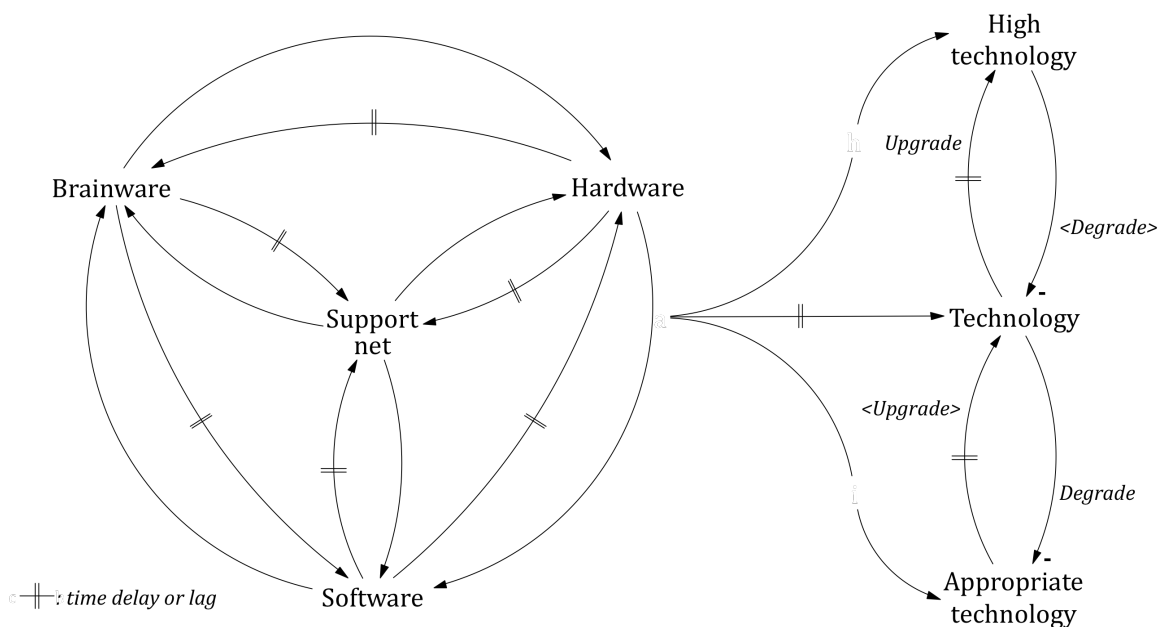


Figure 3. Technology's *four* clearly-defined parts and *three* levels; adapted from: Zeleny (1986).

As Zeleny (1986) points out, technology is neither a thing nor a tool or simply a logical design. Technology is a statically complicated and dynamically complex system of social relations and relationships. The only way it can be properly seen is through the *mutual*, static-interdependence and dynamic-interplay among technology's *four* clearly-defined parts (left, Fig. 3), collegially operating toward a human society's common interests.

With the above definitions in place, it is now possible to distinguish among the *three* levels of ‘high technology’, ‘technology’ and ‘appropriate technology’ (right, Fig. 3). Very briefly (Zeleny 1986):

- a) *High technology* affects the organization and structure of the support network or net. It enables and often requires doing things differently and doing different things.
- b) *Technology* allows doing the same thing, essentially the same way, but better than before.
- c) *Appropriate technology* allows doing the same thing, in the same way as before. It is useful in situations where the sustainability of the support network or net is the dominant concern, i.e., maintaining societal stability.

High technology is vastly different from other technology levels (right, Fig. 3): its support net directly affects the nature and organization of the work performed through high technology. Therefore, much more than other technology levels, «high technology must be managed» (Zeleny 1986).

4. Some empirical evidence and a proposition

Politeia’s emergence and evolution into an innovative, high-technology human system shows neither a *deliberate*- nor an *intended-strategy* design (Mintzberg and Waters 1985). As a dynamic cultural and socioeconomic phenomenon, politeia emerges and evolves into a high-technology human system, *realized* via a collegial-acts flow (right, Fig. 4), each collegial act tracking Homer’s *meta*-ideal: ‘EN EΛEYΘEPHAI AIEN APHCTEYEIN’ or *in liberty forever excelling*, firmly embedded in the civic-, ethical- and moral-ideals system of Abundance, Aesthetics, Truth and Virtue (Ackoff 1994, pp. 49-50), along with civic Harmony, which knits together our other civic, ethical and moral ideals.

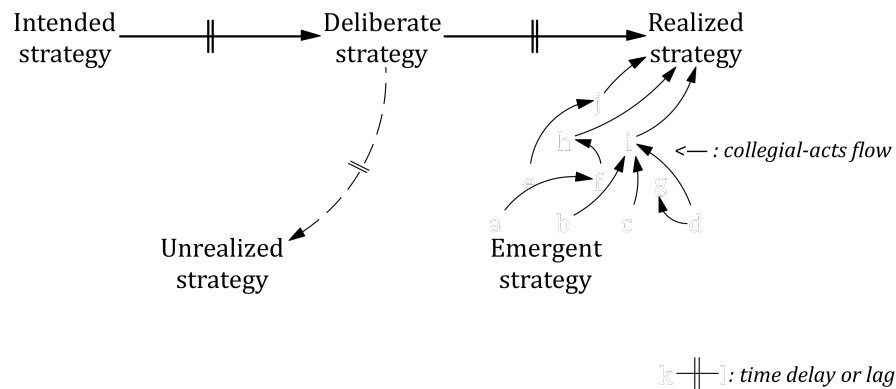


Figure 4. Politeia’s emergence via a collegial-acts flow; adapted from: Mintzberg and Waters (1985).

4.1 Politeia’s brainware

Realized as a high-technology human system, politeia’s autopoietic emergence begins with Homer, who tells and sings of heroes, praising their glory, while, much like the natural philosophers after him, always moving, through time, toward being. Homer is also prophetic about authentic democracy, one of the true polities or political systems that support politeia in classical Hellas.

As an authentic democracy’s prophetic seed, for example, one dialogue in Homer’s *Iliad* tells about king Achilles, who taunts anax Agamemnon and urges the army to mutiny. Later on, the mere hoplite Thersites too insults Agamemnon and, like Achilles, also urges the army to mutiny.

Odysseus resents the hoplite's misconduct and beats Thersites, yet Homer insists that the *Iliad* heroes' behavior is about «ΕΠΙΖΕΜΕΝΑΙ ΒΑΣΙΛΕΥΣΙΝ» or *disputing kings*, not about heroes who generally love to argue (Toutountzi 2009). Subsequently, in Homer's *Odyssey*, Odysseus criticizes the mythical Cyclops because their society lacks a «ΒΟΥΛΗΦΟΡΟΣ ΑΓΟΡΑ» or *volition-bearing market*.

Our neo-postmodern temporality persists, however, ignoring these and other seeds in Homer's works, miraculous trends that aided politeia's autopoietic emergence. Allegedly, searching for the origins of 'democracy', a term which the tyrannical particracy uses euphemistically, only as a cliché-slogan, rather than as a true polity or political system, Acemoglu and Robinson (2006, p. 2) state that 'democracy' begun *under* the british monarchy's iron rod, via the *Glorious Revolution* of 1688 and the *First Reform Act* of 1832.

The british monarchy's 'democracy' notwithstanding, fortunately for our civilization, Anton (2010) and Toutountzi dare see the light in Homer's poetry (2009) and the hellenic mysteries (2001). During politeia's initial emergence, for example, the logos and mythos behind the Athenians' eleusinian mysteries are profoundly revealing.

Of utmost importance is the semiology behind the names of *five* among the children of Metaneira and king Keleus or *woodpecker*. After collegially abandoning their cave and forest dwellings for good, the family inaugurates the politeia of Eleusis, where its members allegedly encounter goddess 'Δήμητρα', *Demeter* or *Da-mother*, 'Δα' or *Da* being the *doric* type of 'Γα' or *Ga* in 'Γαία' or *Gaia* (Toutountzi 2001):

- a) 'Καλλιδική' or *Callidicē*: *good* 'Δίκη', *Dikē* or *Justice*, a goddess, daughter of Titaness 'Θέμις' or *Themis* and 'Ζεύς' or *Zeus*. *Themis* is the personification of divine or natural law. Always beating and choking the ugly spirit of 'Αδικία', *Adikia* or *Injustice*, the comely goddess *Dikē* is the personification of human ordinance, i.e., societal norms and rules.
- b) 'Κλεισιδική' or *Kleisidikē*: the famous for her fairness or righteousness *Dikē*. The word 'κλυτός' or *clytie* means the celebrated or renowned one, but Homer also spells it as «κλειτός» or *cleitie*.
- c) 'Δημῶ' or *Demó*: 'δήμος' or *dēmos* is politeia's collegial principal archon, not simply the people, but the well-educated and trained citizens-hoplites, organized into politeia's *dēmos*. As a collegial institution, *dēmos* stems from the verb 'δαίω' or *daio*, which means *to share*.
- d) 'Δημοφών' or *Demofón*: *dēmos*' *popular one* or *dēmos*' *murderer*; *sa*: our sufferings' healing in *Aristotelian catharsis*, subsection 4.4 below.
- e) 'Τριπτόλεμος' or *Triptolemus*: the legendary hero responsible for the diffusion of agriculture and politeia in our civilization. *Triptolemus* aims at disseminating these toward the entelechy in us, inherently-political beings, since politeia's collegial leadership requires us working together toward our *common good*, itself seen as an ideal or ultimate virtue.

Each and every deviation from politeia's common good supports the shaky despotic regime, which, in all its forms, always kills politeia, as the despotic regime's pyramidal hierarchy (Fig. 2a) can only support a sedimentary politeia, i.e., a degraded technology (left, Fig. 1). Political corruption is also a derogation from politeia's common good, a derogation attributed to our human ignorance about politeia's civic, ethical and moral ideals, and its proper functioning principles.

Inter alia, politeia's brainware incorporates the dimension bundles of 'equality', 'justice' and 'liberty'. The *justice* dimensions bundle emanates from the eternal conflict between goddess 'Δίκη' or *Justice* and goddess 'Αδικία' or *Injustice*, representing –in a broad sense– the notion of 'fairness' or 'righteousness' and the notion of 'unfairness' or 'wickedness', respectively (Fig. 5).

In a narrow sense, *fairness* or justice on the one hand encompasses the notions of *corrective*, *reparative* or *restorative justice* (*Callidicē*, Fig. 5a), and *distributive justice*, on the other (*Kleisidikē*, Fig. 5b). The notion of corrective, reparative or restorative justice further entails the notions of:

redistributive justice, sought after in civil courts (Fig. 5a.1) and *retributive justice*, sought after in criminal courts (Fig. 5a.2).

But it's distributive justice that entails the fair distribution of political goods (Fig. 5b.1) and the fair distribution of material public goods (Fig. 5b.2) among politeia's citizens. Assuredly, hardly anyone today on the surface of planet Earth cares enough to talk about the distributive justice of political goods among politeia's citizens.

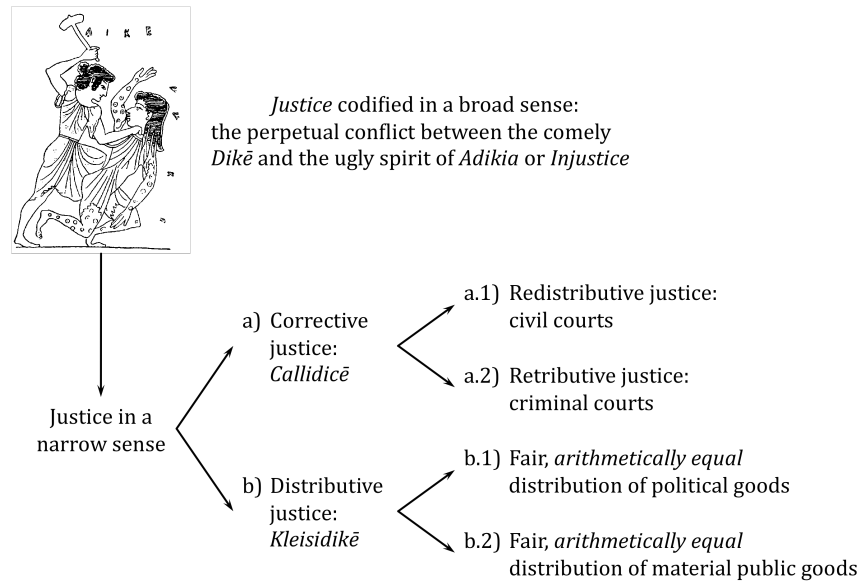


Figure 5. Integrity-in-diversity via the justice dimensions bundle.

Even *under* the despotic regime, however, distributive justice is essential for the proper functioning of every high-tech appliance we use daily. Called 'fairness', now is exclusively used within the context of *computer science*, and *communication* and *information systems* (CIS). Is it not curious that our electronic appliances do need distributive justice, but our societal systems do not?

Politeia's reformers in classical Hellas, such as, for example, Solon, Cleisthenes and Sofonides' son Ephialtes, prudently accept Democritus' original definition of *liberty* as 'το ευθύνειν' or *the responsibility of* and 'το ελέγχειν' or *the control by* citizens, on *three* different levels: *personal*, *societal* and *political*. Consequently, politeia's purposefulness incorporates its citizens' *cumulative* liberty, computed as the sum of: personal liberty + societal liberty + political liberty.

Unfortunately, beyond distributive justice's demise, Democritus' liberty notion too has been deleted in our neo-postmodern temporality. Today, just like our ostensibly 'glorious' constitutions dictate, we the people have only rights, bestowed on us by the despotic, tyrannical particracy, whereas in classical Hellas, only the slaves have rights; politeia's citizens have their cumulative liberty to enjoy and to precious guard: personal liberty + societal liberty + political liberty.

Closely linked to distributive justice is the dimensions bundle of *equality* among politeia's citizens: 'ισηγορία μετά παρρησίας' or *equal time to speak boldly*, 'ισοκρατία και ισοπολιτεία' or *equal liberty to serve or not on politeia's sovereign ruling posts*, and 'ισονομία' or *egalitarianism*. As the numerical average among politeia's citizens –and neither *geometric* nor analogous to some people's ostensibly noble birth– equality not only is fair and just, but also rescues citizens' *Concord* and *Harmony* from *extravagance*, *hubris* and *vanity*.

4.2 Politeia's hardware

Among other things, such as, for example, its theaters, politeia's hardware includes authentic democracy's lotteries. The lotteries operated with brass plates, containing pre-qualified citizens' recognition particulars, while each lottery also included a mechanism fitted with a funnel-shaped tube and colored balls (*see: Museum of the Ancient Agora, Attalos' Stoa, Athens, Hellas*).

Using these lotteries at the time of their authentic democracy, Athenians established a way of randomly selecting among pre-qualified citizens, to serve voluntarily either as jurors or in other public offices among politeia's sovereign ruling posts. The drawing machines were made of stone or wood and their surface was inscribed by *five* to *eleven* narrow columns of notches or gaps, often aligned in *fifty* horizontal arrays or rows.

The brass plates containing citizens' recognition particulars were randomly placed into the gaps, *one* column per demos, representing the pre-qualified citizens to serve voluntarily. In full operation, the mechanism of the funnel tube and the colored balls randomly picked which rows of notches were selected. I.e., each lottery randomly picked which arrays of pre-qualified Athenians would serve voluntarily on politeia's sovereign ruling posts, as their demos' representatives.

In Athenians' politeia, their authentic-democracy's hardware is a practical application of a vast knowledge about stochastic fluctuations and the influence of chance on Nature's creative work. Those Hellenes somehow knew how to use the effects of chance against risks, i.e., those dangers that always threaten an *authentic-democracy system*, which supports politeia.

E.g., politeia's sovereign ruling posts *interweaving* posits a great danger. If interweaving is not controlled through chance, it can easily corrupt the judiciary and, thereby, kill politeia. When those who rule become intertwined with those who are there to control politeia's sovereign ruling posts, it is a matter of time before corrupt judges institutionalize political crimes.

This is how and why politeia's lawmakers collegially create legislative frameworks that do not allow *any* interweaving among politeia's sovereign ruling posts. Their legislative frameworks ensure not only the posts' separation, but also integrity in the diversity of filling these posts.

Assuredly, there is no true distinction among today's *executive, judicial* and *legislative* or any other power in politeia, since the institutionalized citizens' demos collegially owns politeia's all-embracing political responsibility and control. No single person can ever hold central authority or power in politeia because, as a high technology, self-managing human system, politeia repels the very notions of central authority and power.

No single person can dominate politeia because the very subject of dominance is missing: *subjugated people*. Subjugated people is exactly what the despotic regime's pyramidal hierarchy of central authority or power produces, by segregating people into the all-powerful, mighty despots and their *involuntarily-* or *voluntarily-subjugated*, subordinate subjects (Fig. 2a), i.e., us.

4.3 Politeia's software: a proposition

In addition to being merely descriptive, politeia's software also unveils a business proposition for collegial, dynamic interventions, which entail our focusing on civic ideals. These ideals in turn create in business and industry the conditions necessary for politeia's autopoietic emergence, via its collegially spherical structure (Fig. 6), an innovative act of high-technology self management.

The collegial-decisions flowchart on Fig. 6 shows an anasynthesis of politeia's software, i.e., the collegial decision-making guidelines and rules for a high-technology, self-managing human system. The *internal* operations of the proposed collegial, spherically-structured company (CSSC), either non-profit or speculative, is identical to politeia's sovereign, spherically-structured ruling posts and institutions.

These spherically-structured ruling posts and institutions are neither theoretical nor utopian. The collegial-decisions flowchart on Fig. 6 is an exact replica of Aristotle's detailed

description, in his *Politics* book, of the collegial-decisions flow within the spherically-structured politeias of the Athenians, Cretans, Spartans, Syracusans and other Hellenes, where, for example:

Board of Directors (BoD): Spartans' 'Γερουσία' or *Senate* and Athenians' 'Ἀρχοντες' or *Archons*,
 Control Committee (CC): Spartans' 'Ἐφοροί' or *Ephors* and Athenians' 'Ἡλιαστές' or *Heliastes*, and
 General Assembly (GA): Spartans' 'Ἀπέλλα' or *Apella* and Athenians' 'Πνύξ' or *Pnyx*.

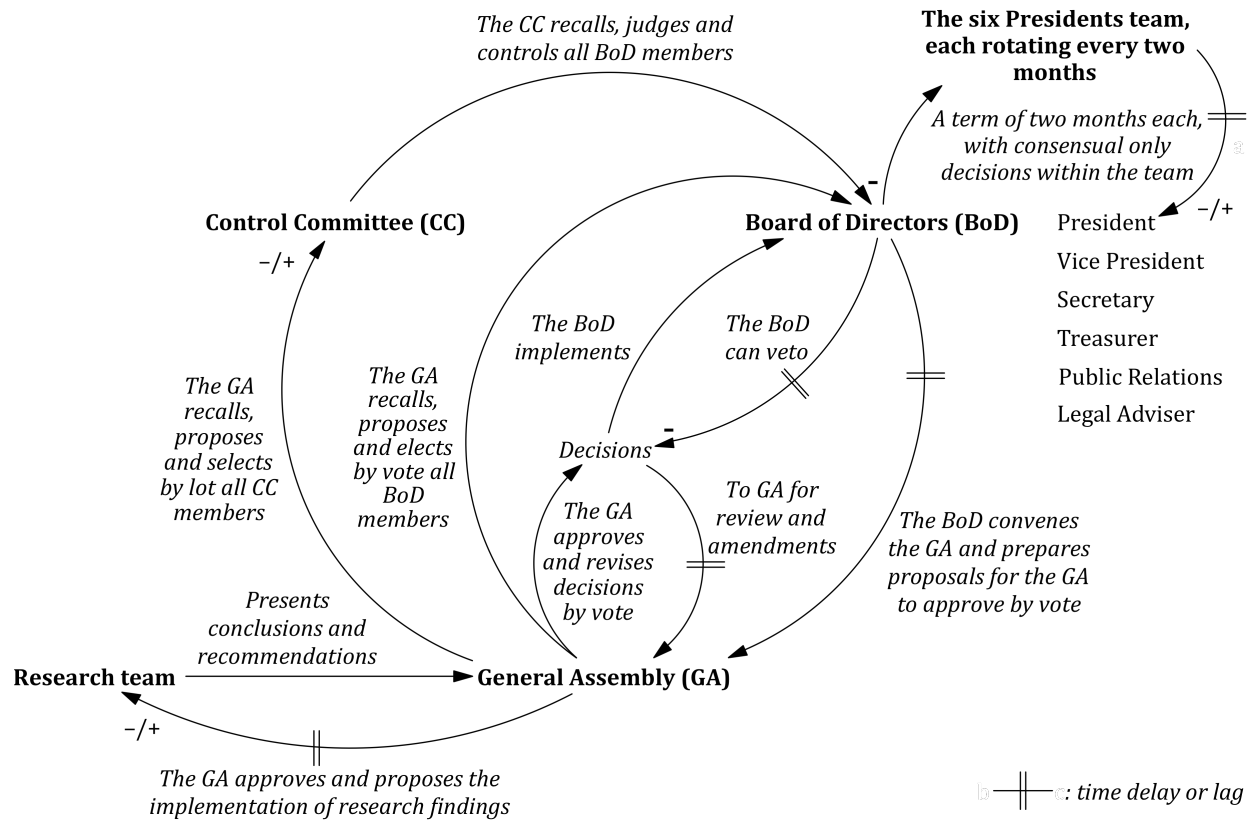


Figure 6. The proposed collegial, spherically-structured company (CSSC), either non-profit or speculative.

Those crafty Hellenes collegially created in their business and industry the conditions necessary for politeia to emerge, without any access to political science texts (Karayannis 2007). But we already have the recombined flowchart of their collegial, spherically-crafted decisions on Fig. 6, instantly ready for the much-needed knowledge innovation in our now floundering business and industry.

In our neo-postmodern temporality, it has long been known that collegial participation in quality-of-work-life decision-making leads to momentous improvements in business and industry. According to a widely recognized expert on the subject, Paul Blumberg, for example:

«There is hardly a study in the entire literature, which fails to demonstrate that satisfaction in work is enhanced or that other generally acknowledged beneficial consequences accrue, from a general increase in workers' decision-making power. Such consistency of findings is, I submit, rare in social research» (1974, p. 123).

About 150 years after the Spartans' one, Athenians' politeia emerges too, through a similarly institutionalized, spherical structure, so that the Athenian citizens-hoplites can also enjoy participating collegially in all political decisions affecting them directly. Successive reforms by Solon, Cleisthenes and Sofonides' son Ephialtes help create the conditions necessary for Athenians' politeia also to emerge and then to evolve into a high-technology human system.

Concerning the collegial, spherically-structured company on Fig. 6, the unity of all members of its General Assembly (GA) defines the proposed CSSC. It is, for example, the GA's quorum that, after collegial deliberations, by vote approves or rejects proposals, presented either by CSSC's members or by a research team (lower left, Fig. 6), either external or internal to the CSSC. The GA's quorum also proposes the implementation of specific research findings, which the research team presents to the GA for approval.

The *outer* feedback spiral on Fig. 6 shows that the GA's quorum recalls, proposes and selects by lot, among pre-qualified CSSC members, the Control Committee (CC) members. In turn, the CC recalls, judges or tries and controls all members of CSSC's Board of Directors (BoD).

As a *first* safety valve against political corruption, 1/3 of CC's members alternate, say, quarterly. Namely, every *three* months, the GA's quorum recalls 1/3 of CC's members; then the GA proposes among pre-qualified GA participants and selects by lot CC's new members.

It is CSSC's BoD that convenes the GA and prepares proposals for resolution by the GA's quorum (lower right, Fig. 6). Moreover, the *intermediate* feedback spiral on Fig. 6 shows that: each calendar year of CSSC's operation, the GA's quorum recalls, proposes among pre-qualified CSSC candidate members and elects by vote the new members of its BoD.

The *inner* feedback spirals on Fig. 6 show that the quorum of the GA, *CSSC's collegial chief or principal archon*, sends its collegial decisions for implementation to the BoD. *Always acting as the GA's agent*, the BoD implements GA's collegial decisions by engaging all BoD members.

Whenever there are obstacles, however, or under external threats, critical to CSSC's survival, then the BoD has the option to veto GA's collegial decisions. So, occasionally, using its veto option, the BoD sends GA's collegial decisions back to the GA for review and needed amendments.

In order to comply with extant legislation, the BoD consists of the President, Vice President, Secretary, Treasurer, Public-Relations archon and Legal Adviser. According to the structure of the central government of 'Helvetia', officially *Confederatio Helvetica* or Switzerland, to the pioneering design of which contributed the brutally then murdered governor of Hellas, Ioannis Kapodistrias, CSSC's BoD incorporates a team of *six* Presidents, whom the GA's quorum elects by vote among pre-qualified candidates, who are CSSC members. The *six* Presidents rotate every *two* months and are responsible for the uptake of *by-consensus only* decisions, i.e., by unanimity, not by vote.

The team of the *six*, alternating, bimonthly rotated Presidents, works as a *second* safety valve against political corruption. An integral part of the despotic regime's pyramidal hierarchy (Fig. 2a), political corruption was introduced to the protectorate of 'Greece', for example, by the pioneers of the despotic regime's tyrannical particracy there: the exponent of british interests and a mouthpiece for the ottoman empire, Alexander Mavrokordatos, and the so-called «tzitzile-fitzile» John Kolettis, founder of the party of *Fustanela* or *French* party.

As long as we collegially wish it, as long as we collegially care about our future, also collegially we can create in business and industry the conditions necessary for politeia to emerge as a high technology, self-managing human system. After all, are we not as crafty as those Hellenes?

Perhaps it is high-time we realized that, without rendering obsolete the pyramidal hierarchy of the despotic regime's tyrannical particracy (Fig. 2a), which only decay and violence promotes, it will never be possible to see any real, positive results. Politeia's sovereign, spherically-structured ruling posts and institutions can work wonders along the collegially spherical structure of the proposed CSSC (Fig. 6), instantly turning around our now wavering business and industry.

Only in this manner can the virtuous, i.e., actively-participating true citizens, collegially create and collegially flourish toward our common eudæmonia and, hence, our personal bliss too.

Given the need to reinvent our life on a shrinking Earth, i.e., shrinking with respect to all our activities that Earth supports, the only question is: do we collegially wish to give it a try?

Even if the try is just for six months. If we do not like what we see, i.e., if we do not see any *drastically* positive (+) results within six months, then we still have the liberty to shut down each CSSC project, without *any* harm done whatsoever.

4.4 Politeia's support net

...ΔΙ' ΕΛΕΟΥ ΚΑΙ ΦΟΒΟΥ ΠΕΡΑΙΝΟΥΣΑ, ΤΗΝ ΤΩΝ ΤΟΙΟΥΤΩΝ ΠΑΘΗΜΑΤΩΝ ΚΑΘΑΡΣΙΝ
(...arousing pity and fear, wherewith to achieve catharsis of similar sufferings)
Aristotle, *Poetics* (1449 β25)

In addition to its sovereign laws, tragedy and its related Aristotelian catharsis also constitute an integral part of politeia's support net. This net's hardware design includes the hellenic theaters' sound management: ceramic or metal vessels echoing underneath each theater's tier steps aid the work of the nearby health clinics, always dedicated to the healer semi-god Asclepius.

Along with the 'θεωρικά' or *money distributed to poor citizens for theater seats*, inside its theaters, politeia's brainware literally penetrates the *three* hypostases of each citizen's 'τριτώ' or *head*, thereby supporting not only politeia's sustainability, but also its citizens' 'ανέλιξις' or *development*. The inner, dynamically complex workings among each citizen's *instinctual, reptilian* or *vertebrae* part, the *co-sentimental, limbic* or *mid-brain* part and the *logical* or *mental-neocortex* part of the human brain lead to Aristotelian catharsis (Tziropoulou-Efstathiou and Konstantopoulos 2005).

Some cultures repel feelings, but politeia's citizens lift this repulsion. Aristotelian catharsis entails: *mental healing*, so that we think logically and objectively, *co-emotional healing*, which calms and soothes our feelings, and *physical healing*, by removing pain's pathogenic sources (Tziropoulou-Efstathiou and Konstantopoulos 2005).

These mental processes help human consciousness and self-awareness develop, in turn leading to the virtues of bravery, courage and self-sacrifice. Consequently, unable to exist *under* any despotic, tyrannical regime, politeia's citizens precious guard and pursue their cumulative liberty (Tziropoulou-Efstathiou and Konstantopoulos 2005).

5. Politeia's value-added self management

Zeleny (1986) sees the enormous impact that each technology level has on its respective support net. In managing the sub-systems within politeia's high-technology, self-managing human system, the managerial tasks' nature can be vastly different among technology's *three* different levels: high technology, technology and appropriate technology (right, Fig. 3).

Politeia's high-technology, value-added self management requires collegial leadership and organizational skills pertinent to: discontinuity, knowledge innovation, lack of linear balance, self reliance and, of course, the spherical, fair distribution of politeia's sovereign ruling posts among all its citizens. As a high-technology human system, politeia must not only manage itself, but it must make it so in a fair, spherical manner of collegial control and responsibility (Fig. 2b), utterly divorced from the despotic regime's pyramidal hierarchy of central authority and power (Fig. 2a).

While serving on its sovereign ruling posts, politeia's citizens must learn to manage discontinuities, post multi-functionality, re-identification of tasks and responsibilities, reorganization, structural change, but also the integration, as opposed to the mere personalization, of knowledge and work. All these tasks and responsibilities require collegial care and high critical

thinking, radically different skills from those we encounter *under the unnaturally dull*, pyramidal hierarchies of our neo-postmodern temporality.

Pyramidal hierarchies of central authority and power are unnaturally dull not in a manner of speaking, but literally! Physics researchers Michael Brenner, *Harvard*, and Jeremy England, *MIT*, show how self-replicating sphere clusters also emerge in quantum fields (Wolchover 2014). Their data show how microspheres spontaneously assemble into chosen structures, and then trigger nearby spheres into forming identical structures too, collegially following a pattern similar to the *outer* feedback spiral on Fig. 6.

Politeia's autopoietic, collegial self-management begins as a vastly-different, qualitative step, not as an evolutionary process, which simply extends or rests on past practices of central authority and power. It organically requires ability and self-confidence, collegial or team leadership, creativity, flexibility and knowledge, i.e., previously unnecessary human capabilities and skills.

In politeia's high-technology human system, forming the requisite volition-bearing market is not exactly the same as buying and selling dog food. Politeia's autopoietic, high-technology self management requires the acquisition of a new organizational paradigm for our society, around new, true citizenship forms, new culture, new tasks and even new ways of doing business.

In short, an entirely new 'παιδεία' or *education* is needed, around many new skills. But this is precisely where the proposed collegial, spherically-structured company (Fig. 6) helps the most.

Just like politeia, each CSSC too is meant to work as an experiential-learning laboratory, nursery or workshop, yielding a fast growth rate in critical thinking, thanks to the collegial, spherically structured, participative decision-making it affords. The 99 percent critical-thinking mark on Fig. 2b is not a prerequisite, but a desirable performance metric, outcome or result.

All this, of course, probably is much more than the average, tyrannical-particracy 'shopper' of our neo-postmodern temporality is expected to desire. Inevitably, however, while we still care about our human species' sustainability, we must collegially engage in the process of upgrading from our sedimentary one (left, Fig. 1) to politeia's high-technology human system (right, Fig. 1).

It is worth noting that, with their constant interfering in our business and industry, all tyrannical particracy's parties contribute the most to perpetuating the despotic regime's pyramidal hierarchy of central authority and power (Fig. 2a). That is why Cleisthenes had to cleverly render all parties obsolete, in order to enable the proper functioning of the Athenians' politeia.

It is fascinating how all tyrannical particracy's parties always speak of 'democracy', but they never mention politeia. Fascinating because politeia can exist without democracy, but democracy can *not* exist without politeia. Without politeia, democracy is just a utopia. So, it is safe for parties to talk of 'democracy' because, without politeia, an *authentic-democracy system* is inconceivable.

Zeleny (1986) also points out how it is one thing to manage the *status quo* and quite another to manage short-term improvements. Unfortunately, *under* the despotic regime's perennially sad fiscal and economic performance, all such improvements always come at the expense of us, the people, e.g., look at our health care.

And it is an entirely different thing to self-manage collegially, as a team, new for us true polities or political systems, which we have not previously encountered or experienced, in ways not previously tested in our neo-postmodern temporality, and which previously have not even been mentioned or clarified, e.g., the proposed collegial, spherically-structured company on Fig. 6. Yet this is precisely what we must do, with a tenaciously collegial purposefulness to pursue our common good in business and industry: our common eudæmonia and our common economic prosperity, so that we also thrive as individual human beings.

This is, at once, a moral imperative and our challenge: collegially creating in business and industry the conditions necessary, so that one day soon we can collegially self-manage our politeias as high-technology human systems. The value-added stemming from our making it so might resemble a torrent of collegial choices, leading to true polities or political systems, which must be

able to withstand the jolts of our collegially creating in business and industry those conditions needed for politeia's high-technology, self-managing human system to emerge.

Within each society-specific culture, our torrent of choices among true polities or political systems can be seen as a collegial folk check. It is vital to pick choices that express the collegial will of all informed citizens, in effect spontaneously forming a volition-bearing market, toward politeia's atonement into in a high-technology, self-managing human system, *in* and *about* which we all deserve to live and to create in utter bliss or eudæmonia.

The organically collegial, spherically-structured companies that we spontaneously craft and create must incorporate all the mutual interactions among technology's *four* clearly-defined parts (left, Fig. 3). And regardless of the specific, true polity or political system we choose to support politeia's autopoietic emergence, each society-specific culture must bear all collegial control and responsibility in weaving politeia's brainware, hardware, software and support net, while aiming at our common eudæmonia and economic prosperity, so that we indeed thrive as individuals too.

As a *first* step, each collegially created CSSC must bear politeia's equally collegial, organic, spherical decision-making structure (Fig. 2b and Fig. 6). And it will be most blissfully eudæmonic for all concerned, if all of us collegially follow Homer's meta-ideal: *in liberty forever excelling*, firmly grounded in the civic, ethical and moral ideals that Abundance, Aesthetics, Truth and Virtue express (Ackoff 1994, pp. 49-50), not forgetting our civic Concord and Harmony, which unify the rest of our civic, ethical and moral ideals.

6. Epilogue

A system's structure entails all those invisible cause-and-effect relations that form its feedback loops or spirals, which drive the system's behavior through time (Meadows 1989, Sterman 2000, p. 16). Even if Oliva finds system dynamics keen in comprehending system performance, «not structure per se» (2004, p. 331), in lieu of SD's core tenet that structure drives performance, undeniably, while looking for *systemic leverage* (Georgantzis and Ritchie-Dunham 2003), decision makers and modelers do play with changes in system structure toward superior performance.

Yet our neo-postmodern temporality is still witnessing the disastrous consequences and daily failures of the despotic regime's tyrannical particracy, which can only support a sedimentary politeia (left, Fig. 1). Irrespectively of its specific name, shape or form, the despotic regime's pyramidal hierarchy of central authority and power (Fig. 2a) always kills politeia, degrading it, both effectively and efficiently, from a high-technology, self-managing human system (right, Fig. 1), to a dire heap of inappropriate technology (left, Fig. 1).

It might be worth noting that politeia's present anasynthesis as an innovative, high-technology, self-managing human system does *not* subscribe to any *philosophical-liberalism movement* and is, at once, utterly unmoved by the *extreme-individualism movement*. If anything, politeia's present anasynthesis context and subtext are marked by all conceivably practical bearings of *american-pragmatism's* proponents: Charles Sanders Peirce, William James and John Dewey.

This anasynthesis or recombination of politeia, i.e., an autopoietic phenomenon approached via the research method that entails studying both the whole and the parts of a system, in order to build a crucial insight about it, begins with politeia's definition by Aristotle. Zeleny's technology definition follows (1986), unveiling technology as a spherical unity of socio-political relations and relationships among its *four* clearly-defined parts (left, Fig. 3).

Embedded within the context and subtext of the Aesthetics ideal, the definitions of Art and Logos, and politeia's incorporation into the cultural and socio-economic context and subtext of an emergent strategy (Mintzberg and Waters 1985), naturally lead to recognizing politeia as a high technology (Zeleny 1986), self-managing human system. The value-added from politeia's autopoietic (Zeleny 1977), high-technology self management demands not only collegially transforming our culture-specific, human societies toward becoming politeia's collegial chief

archons, but also making it so in ways that render obsolete the despotic regime's pyramidal hierarchy of central authority and power (Fig. 2a), which has brutally dominated our business and industry's recent past.

Politeia's present anasynthesis axiomatically presumes that in his *Politics* book, Aristotle is disclosing documented empirical evidence about the spherically-structured politeias of the Athenians, Cretans, Spartans, Syracusans and other Hellenes. As a safety valve, if this axiom does not hold, then you have wasted your time reading this essay and I apologize for my *faux pas*.

If, however, Aristotle is indeed disclosing politeia's documented empirical evidence, then the gaffe is on you, unless you act spontaneously to urgently co-create the necessary conditions for a collegial, spherically-structured company to emerge. Alternatively, you must help to collegially transform an existing firm, your own perhaps, either non-profit or speculative, into a CSSC (Fig. 6).

A word of caution! The proposed collegial, spherically-structured company has absolutely nothing to do with our neo-postmodern temporality's much-vaunted, *concentric-circles hierarchy* of central authority and power, propagated via the cliché-slogan of *network* or *pluricentric governance*.

Do we wish to continue *muddling through*, merely surviving *under* the authoritarian, parasitic regime, where every ilk of 'positive' performance always leads to destructive side-effects on us, the people? Do we wish to continue feeding this radically-outlandish, swanky regime and its tyrannically-totalitarian particracy, which always take from us, offering nothing positive to our society-specific cultures, but only brutally producing negative effects, constantly preying on us?

The spontaneous creation of the proposed CSSC (Fig. 6), either non-profit or speculative, provides a powerful antidote to our muddling through *under* the despotic regime, i.e., it offers the systemic leverage needed toward our common purposefulness in business and industry. If our business and industry is to flourish and to thrive –not just to survive, we must collegially facilitate politeia's autopoietic emergence as a high technology, self-managing human system.

Do we collegially wish it? Have we the capability to collegially enable it? Are we to let *political Eros* accelerate the collegial pursuit of our civic, ethical and moral ideals, which leap out of the *erotic dæmon* in us (Anton 2010)?

7. Acknowledgement

I am utterly grateful to the painter's palette worker, Ms. Vassia Zarifopoulou, for the definitions of *Aesthetics* and *Art*, in section 3. Her critical remark is this: in *three* dimensions, the much-vaunted, *concentric-circles institutional form* does *not* yield a collegially spherical decision-making structure (Fig. 2b and Fig. 6), but a tiered-conical pyramid's hierarchy of central authority and power (Fig. 2a), i.e., oriental despotism in Erebus' gloom. Likewise, a tiered-conical pyramid's top-view, *two*-dimensional projection yields the same *concentric-circles hierarchy* of central authority and power.

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Nicholas C. Georgantzas is Professor, Management Systems, and Director, System Dynamics (SD) Advisory, *Fordham University Gabelli Business School*, New York, NY, USA. Currently Co-editor-in-Chief, *Human Systems Management*, he has served as both Associate and Guest Editor, *System Dynamics Review*, and as Guest Editor, *Human Systems Management*. Dr. Georgantzas is also advisor to senior management and partners of advisory firms as well as a forensic economist, specializing in SD simulation-modeling for crucial insight into strategy, production and business process (re)design. First co-author of *Scenario-Driven Planning: Learning to Manage Strategic Uncertainty* (Quorum-Greenwood, 1995), he has published expansively in refereed scholarly journals, conference proceedings and edited books. Mostly transdisciplinary, his action-research, publications and advisory services entail systems thinking, knowledge technology and strategy design, focusing on the necessary theory and tools for learning both *under* the ubiquitous but highly problematic, in our epoch, pyramidal hierarchy of central authority and power, and *in* and *about* the statically complicated and dynamically complex systems we all live.