POSDCORB: Core Patterns of Administration

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This manuscript extends Luther Gulick's organizational patterns. Patterns are a way to integrate complex theories and practices. Yet administrative, legal and constitutional contexts may not always be clear. Gulick gave voice to POSDCORB within a notable pattern-based discussion. The respective elements, consistent with the designs of Christopher Alexander, are suggested as being *true invariants*. A careful reading of Gulick's work reveals techniques of design when he planned the reorganization of New York City and the Executive Office of the President. From his lineage, it is suggested that Gulick practiced a newly coined technique called *multiple social inheritance*. The application of other techniques, such as *organizational polymorphism* and *socio-encapsulation*, are also discussed. The Hillside Group's patterns community is dedicated to developing patterns. Their refined structure was used to document the POSDCORB-based patterns, both in parts and as a whole. While the POSDCORB elements are certainly not the only administrative patterns, they may be representative of the core.

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1. INTRODUCTION

This manuscript develops core patterns of administration. The documentation of patterns allows for purposeful action. Utilizing POSDCORB, this seasoned acronym stands for: Planning, Organizing, Staffing, Directing, Coordinating, Reporting, and Budgeting. Luther Gulick, a highly respected scholar and administrator, first discussed this word among his colleagues [Gulick 1935], and elements can be found in their collaboration [Commission of Inquiry on Public Service Personnel 1935]. He continued to refine his concept based on executive-level experience including New York's administration, as well as co-authoring a report to reorganize the office of a United States president. In his time Gulick articulated the word and the associated elements in a piece titled "Notes on the Theory of Administration" [1937a]. That document was widely read, and the applicability of POSDCORB has been discussed, in sources too numerous to cite, up to the present [Raadschelders and Lee 2011]. POSDCORB can be found in representations of public administration [Agranoff 2007; Agranoff and McGuire 2001; Fairholm 2004], and it has been suggested as a framework [Chalekian 2013; Graham and Hays 1993]. The following approach is interdisciplinary – to bridge the concepts of administration with the techniques of the Hillside Group's patterns community. Using their methods, while acknowledging contexts and forces, some core patterns of administration can be discerned.

Gulick helped develop the presidential report, and POSDCORB served as the framing idea [Stillman 1991]. At first Congress did not immediately heed the subsequent proposals. However, the underlying philosophy became the base point for administrative reforms "...and its influence persisted for many decades" [Mosher 1976, p. 207].

One distinguished scholar maintained that the report was probably "the most important constitutional document of our time" [Egger 1975, p. 71]. Another constitutional scholar agreed [Rohr 1986]. So positioned, the patterns herein have unique forces and contexts[1].

2. ADMINISTRATIVE THEORY AND PRACTICE

Commonalities can be found when addressing problems in administration. Yet, professors often teach courses as subsets of the discipline as a whole. The abstractness taught in class may sometimes frustrate students. Yet, some believe abstract methods are plausible [Booch 1994; Gamma et al. 1995; Goldberg and Rubin 1995; Kerievsky 2005]. Seldom do situations at work coincide with what students are taught. In this paper functionally specific examples will be limited as the contexts and forces are diverse.

Providing examples for each pattern would be too unwieldy. The budgetary aspects alone would be voluminous. In the patterns presented below, administrative contexts may not always be clear. And the forces described are not for the timid. However, Gulick's POSDCORB may widely illuminate the issues, concerns and problems for information managers (c.f. [Horton 1985]), and for them the concept may be overarching [Caudle 1990]. POSD-CORB remained vital for defining the essential subjects in graduate programs of public administration [Stillman 1991]. So, although POSDCORB was formed during the "classical" era of the discipline [Shafritz and Ott 2001], it remains quite relevant.

The goal of this paper, as Gulick set forth, is to call attention to administrative patterns. Some may associate "classical" organizational theory with rigid *Command-and-Control*. These practices were tried and later resisted in the 1980s in favor of human development and *collaborative* organizations. For now, the author would like readers to tenderly set those assumptions aside. Indeed, effective *communication* within an organization is key but the identification of patterns and the development of frameworks may ease some concerns.

Target readers would be students of government, as well as anyone who wishes to practice administration. While POSDCORB-based patterns are not the only administrative patterns, they may be representative of the "core" patterns. What follows is not the solution to all administrative problems. A partial reason is that some of the contexts are arena-like.

Administration scholar Jos Raadschelders described an arena model of the study of administration. And, according to him, practitioners are "squarely in the middle" [2004, p. 63]. Eleanor Ostrom [2005], a framework scholar, acknowledged the pattern-based work of Christopher Alexander. Subsequently, she described an action arena as the "focal units of analysis" [2005, p. 13]. As forces content and events unfold, these unique contexts may be categorized as arena-based[2]. However, a categorization of the key issues faced by administrators may still be possible. An integration of solutions may become more likely, but first a history of the discipline is needed.

3. AN ARGUMENTATIVE CONFLICT

As mentioned above, discussions of POSDCORB have been categorized within a "classic" view of organizational theory [Shafritz and Ott 2001]. These have been well documented, including the works of Taylor [1903], Fayol [1937], Gulick [1937a] and Urwick [1937]. "Neoclassical" organizational theory has been portrayed as trumping the former in several introductory sources (e.g. [Stillman 1991; Shafritz and Ott 2001; Scott 2003]). Herbert Simon played a key role in the development of "neoclassical" organization theory, thereby challenging the classics

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[1]To appreciate these constitutional contexts, consider the work of one who was among the first to administer a legitimized program. Judge Thomas M. Cooley, of the Interstate Commerce Commission, is an example (see John Rohr's *To Run a Constitution*, 1986, p. 90-110).

[2]An arena context is one which may be omnipresent with more immediate forces. The Free Dictionary [2014] defines an arena as "[a] place or scene where forces contend or events unfold." The following are not all inclusive, but may be entrenched in public administration: legal context – such as requirements to implement legitimized policy; judicial context – i.e. actions required by a consent decree; constitutional context, which may ensure the rights of individuals through written document; jurisprudent context, such as balancing the rights of corporations (in the broadest sense); and liminal context, whereby administrative judgment is required when lacking precedent.

[Shafritz and Ott 2001]. His 1947 book, titled *Administrative Behavior*, became the most influential in public administration [Sherwood 1990]. Vincent Ostrom [1989] claimed that Simon's attack on the works of Gulick was associated with an intellectual crisis of the discipline. Generations of scholars may not have read Gulick [Meier 2010], yet, his work sits prominently in the representations of contemporary researchers [Agranoff 2007; Agranoff and McGuire 2001; Chalekian 2013; Fairholm 2004]. Submissions to a prominent public administration journal reveal how most remain squarely within POSDCORB categories [Raadschelders and Lee 2011]. Scholars could be sending one message, whereas students may be receiving another.

4. PATTERNS – A WAY TO INTEGRATE

Gulick has been called "The Integrated Executive" [Fry and Raadschelders 2014, p. 112]. An articulation of his patterns may provide some much needed guidance. It is anticipated that students of POSDCORB will become less concerned with abstraction. Further, they may be able to apply some of these patterns to their particular situations. It is also hoped that practitioners of administration would feel more confident, knowing some patterns exist. As outlined below, POSDCORB represents some core practices of administration. In terms of durability, scholars have asked whether there is "a POSDCORB equivalent set of tasks that replaces the standard planning, organizing, and so forth?" [Agranoff and McGuire 2001, pp. 297–298]. They later reported "to date, no readily agreed-upon set of functional activities exists that is the hierarchical equivalent of POSDCORB" [Agranoff 2007, p. 26].

What "class" is POSDCORB that makes it so enduring? A class can be defined as a template for the creation of instances [Goldberg and Rubin 1995]. A "base class" is the most generalized class in a class structure [Booch 1994]. Others have documented instances [Chalekian 2013; Fairholm 2004] and positioned POSDCORB within their focal core [Agranoff 2007, p. 194]. Being a "base class," a POSDCORB framework cannot be functionally specific. Social science scholars may be slow in coming to this realization. For instance, a "base game" of one framework showed only a physical world, and thus emptiness or nothing [Crawford and Ostrom 2000]. Empty classes or categories also appear in linguistics [Chomsky 1996].

Organizational theorist James Thompson found "alternate ways of homogenizing positions or components" [2003, p. 57]. In paraphrasing Gulick, he noted how organizations could be grouped or separated "on four different bases: (1) common purpose or contribution to the larger organization, (2) common process, (3) a particular clientele, or (4) a particular geographic area..." [Thompson 2003, p. 57]. These "bases" are still being taught (c.f. [Rosenbloom 1998]). Gulick's groups may be considered a form of encapsulation. But Thompson warned of real-life difficulties: homogenizing on one dimension does not homogenize on all. This suggests the possibility of "empty" classes. So qualified, Thompson continued on to extend numerous propositions. He thought it was essential to (with our emphasis added) "find universals, but equally essential to find *patterns* in variations" [Thompson 2003, p. 161]. But just as the work of Thompson endures [2003], so does the work of Gulick [Meier 2010].

In text, Gulick [1937a] gave voice to POSDCORB following his discussion of organizational patterns. An analysis, if it is to be of value in future years, "must be brought within a single system of definition and nomenclature" [Gulick 1937b, p. 195]. Gulick employed a sequence to his list [Fitch 1996], as do other pattern scholars, (e.g. [Alexander et al. 1968; 1977; Kerievsky 2005]). Accordingly, he made up the word POSDCORB, "designed to call attention to the various functional elements of the work of a chief executive" [Gulick 1937a, p. 13].

Having a domain for patterns is important [Alexander 1964]. Design is concerned with how things ought to be, and "with devising artifacts to attain goals" [Simon 1981, p. 133]. A framework serves to codify a language, and the resulting structures can be defined as being "a kind of micro architecture that codifies a particular domain" [Booch 1996, p. 274]. Finding the fundamental elements is important for frameworks [Ostrom 1999]. Public administrators indicated that the traditional activities summarized by POSDCORB "fully explain the purpose and processes of their work" [Fairholm 2004, p. 586]. Noting the possibility of other domains and frameworks, the domain of this representation may be considered established.

5. TRUE INVARIANTS

Contemporary scholars of administration have recognized the importance of "a pattern language" as described by Alexander [Chalekian 2013; Johnston and Hicks 2004]. Elements are the patterns themselves whereby each one describes a problem which:

> . . . occurs over and over again in our environment, and then describes the core of the solution to that problem, in such a way that you can use this solution a million times over, without ever doing it the same way twice. [Alexander et al. 1977, p. x]

Some patterns may be "true invariants," or a solution that summarizes a property common to all possible ways of solving a stated problem [Alexander et al. 1977]. It is possible the elements of Gulick's POSDCORB are some "true invariants" of administration. For instance Gulick described how "[p]lanning is a psychological attitude and a habit. . . to be built into every process of management" [Blumberg 1981, p. 247]. And, from his experience, Gulick tried to use seven simple objects – POSDCORB – in his attempt to teach administration.

Using the techniques of Alexander et al. [1977], a series of administrative patterns may be articulated. This is especially so if they follow a pattern language – invoked by a predetermined structure. To him, patterns can exist in the world, but only to the extent that they are supported by other patterns. Some are more significant. Thus, in the works of Alexander and his team, they signified their patterns with two asterisks, one asterisk, or none. Alexander further described how patterns at the highest level succeed in stating a "true invariant." Beside the notes from above, these two asterisk patterns describe "a deep and inescapable property of a well-formed environment" [Alexander et al. 1977, p. xiv].

Of course, less ambitious patterns also exist. He continued, whereby other Alexandrian patterns make progress towards identifying such invariants, but with careful work "it will certainly be possible to improve on the solution" [Alexander et al. 1977, p. xiv][3]. For this paper, the same multiple level hierarchy (and qualifications) will be followed. For instance, patterns at the most fine-grained level have been called *idioms* [Buschmann et al. 2007]. Specific contexts, as implied earlier, are more evident at these lower levels.

The development of succinct patterns, those fundamental to administration, appears to be lacking. According to Alexander, patterns meriting two asterisks require a degree of certitude. As presented earlier, proof of social science phenomenon – at least compared to the physical sciences – may be elusive. Using a framework-theory-model approach, at least one researcher suggested instances of POSDCORB. In a three part argument, Chalekian [2013] suggested that Gulick utilized design, that blends of public policy and a construct were congruent, and that support could be found for POSDCORB elements. With a dependent proxy for "Reporting," adoptions of an institutional variable were detected in the organizational models (Figure 1). It is the author's opinion that studies should move forward with a renewed focus on an established frame.

6. PATTERNS AND FRAMEWORKS

What constitutes POSDCORB at such a high level? As indicated above, a forward section of Gulick's "Notes . . . " is actually titled "Organizational Patterns" [1937a, p. 11]. Careful reading reveals the object-oriented *design* elements of encapsulation, inheritance and polymorphism. Gulick provided examples of these techniques (below) while planning for the reorganization of New York City [1937a]. Encapsulation has been defined, with our emphasis, as having attributes whereby "the language supports the representation of information and information processing as a single unit that *combines* behavior with the information needed to carry out the behavior" [Goldberg and Rubin 1995, p. 46]. Per Gulick:

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[3]Alexander believed that mid-level patterns should be treated carefully, and that variants should be sought out. Most certainly, ranges are not covered by all the solutions that are written. And patterns at the lowest level do "not succeeded in defining a true invariant – that, on the contrary, there are certainly ways of solving the problem different from the one which we have given" [Alexander et al. 1977, p. xv].
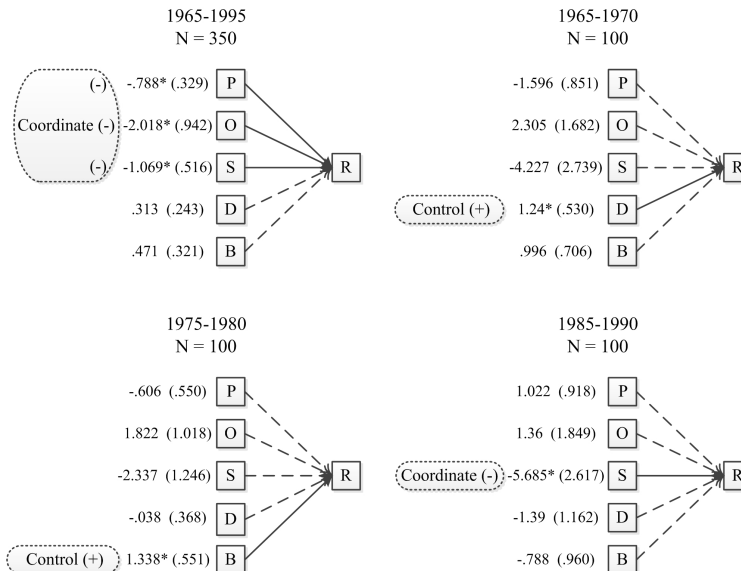
1965-1995
N = 350

(-)	-.788* (.329)	P
Coordinate (-)	-2.018* (.942)	O
(-)	-1.069* (.516)	S
	.313 (.243)	D
	.471 (.321)	B

1965-1970
N = 100

	-1.596 (.851)	P
	2.305 (1.682)	O
	-4.227 (2.739)	S
Control (+)	1.24* (.530)	D
	.996 (.706)	B

1975-1980
N = 100

	-.606 (.550)	P
	1.822 (1.018)	O
	-2.337 (1.246)	S
	-.038 (.368)	D
Control (+)	1.338* (.551)	B

1985-1990
N = 100

	1.022 (.918)	P
	1.36 (1.849)	O
Coordinate (-)	-5.685* (2.617)	S
	-1.39 (1.162)	D
	-.788 (.960)	B

Fig. 1. Path Coefficients for the Models. Coefficients for significant variables (with standard errors) $* p < .05$. A positive coefficient indicates probability of centralization / control, whereas a negative coefficient indicates probability of decentralization / coordination. Adapted from [Chalekian 2013].

> The Charter Commission of 1934 approached the problem with the determination to cut down the number of departments and separate activities from some 60 to a manageable number. It was equally convinced after conferences with officials from the various city departments that the number could not be brought below 25 without bringing together as "departments" activities which had nothing in common or were in actual conflict. This was still too many for effective supervision by the chief executive [1937a, p. 12].

Certainly, the needs of city constituents did not go away. Thus, it appears Gulick was capable of encapsulating New York's operations.

Inheritance was apparently used wherein "the language supports the definition of a new entity as an extension of one or more existing entities, such that the new entity inherits existing behavior and information" [Goldberg and Rubin 1995, p. 46]. With our addition, he continued:

> As a solution it was suggested by the author [Gulick] that the charter provide for the subdividing of the executive by the appointment of three to four assistant mayors to whom the mayor might assign parts of his task of broad supervision and co-ordination. Under the plan the assistant mayors would bring all novel and important matters to the mayor for decision, and through continual intimate relationship know the temper of his mind on all matters, and thus be able to relieve him of great masses of detail without in any way injecting themselves into the determination of policy [Gulick 1937a, p. 12].

As above, the mayor's assistants were passing on the mayor's behavior, as well as providing information about the mayor's values and policies.

Polymorphism can be characterized by "the language make[ing] it possible to send the same message to different objects and elicit a distinct but semantically similar response from each" [Goldberg and Rubin 1995, p. 46]. Gulick, with our emphasis, continued:

Under such a plan one assistant mayor might be assigned to give *general* direction to agencies as diverse as police, parks, hospitals, and docks without violating the principle of homogeneity any more than is the case by bringing these activities under the mayor himself, which is after all a paramount necessity under a democratically controlled government [1937a, p. 12].

General direction supports polymorphism, and further, some contexts were given. Returning to Inheritance, and possibly *multiple* inheritance, Gulick continued:

This is not a violation of the principle of homogeneity provided the assistant mayors keep out of the technology of the services and devote themselves to the broad aspects of administration and co-ordination, as would the mayor himself. The assistants were conceived of as parts of the mayoralty, not as parts of the service departments [1937a, p. 12].

From Gulick's single paragraph above, we can see how he envisioned layers. For instance, aspects of Gulick's decision-making, in Directing, embodies both "specific and general orders" [1937a, p. 13]. Raadschelders [2004] determined that administrative theory needs to satisfy generalists and specialists. Gulick's synopsis will be revealed in his Directing pattern (below). Broad aspects of administration were designated to be the focus of others. He continued: "though on a different plane, other phases of the job of the chief executive may be organized" [1937a, p. 13]. This designation could be deemed a delegation, but the mayor would be ultimately accountable. Later in "Notes..." Gulick charted the entities in functionally specific departments, and dual dimensions [1937a, pp. 17–18]. On another chart (titled "Fabric of Organizational Interrelation"), he stripped away *all* except the networks [1937a, p. 19].

This is clearly abstraction. Abstraction techniques are used by modern engineers (e.g. [Booch 1994; Gamma et al. 1995; Goldberg and Rubin 1995; Kerievsky 2005]). Gulick's chart of network interrelations implies a need (in some cases) for context-free leadership. Encapsulation carefully strips away context. As he planned New York City's reorganization, Gulick did so based on his knowledge of patterns and interfaces. No doubt those aspects were numerous. But, his 1934 charter produced "the basic framework of the city government of New York as it is known today" [Viteritti 1989, p. 25].

In one paragraph, the "Notes..." entry (above) revealed elements of polymorphism, inheritance and encapsulation (PIE). Modern engineers also use these object-oriented techniques. Scholars of administration are beginning to find these techniques useful. According to some, a modeling framework, by its generative nature, lends itself naturally to an object-oriented approach with "structures that hold data and procedures" [Kim et al. 2011, p. 581]. Thus, it would not be a stretch to align the attributes of a POSDCORB framework with the techniques of PIE, and with abstraction, A-PIE.

Gulick indicated the need for *Primary* subdivision, first under the chief executive, to be followed by *secondary, tertiary, or subordinate* subdivision [1937a, p. 29]. Assuming directions are to be passed from the very top – through assistant mayors and so on – then *multiple* inheritance can be found. Sidney Gulick, Luther's father, described *social inheritance* "given, not by biological processes, but by education, by language, by every influence that moulds the heart and mind and will" [1915, p. 130]. We can assume Luther was at least familiar with his father's work. In his time, the younger Gulick alluded to networks, typed by purpose, process and region [1937a, p. 19]. Others [Rosenbloom 1998; Thompson 2003; Hammond 1986] have found these aspects useful for teaching and research. Network concerns have been brought up by contemporary scholars [Agranoff and McGuire 2001], but perhaps these complexities have been partially addressed by using patterns and layers [Buschmann et al. 1996; Fowler 2003]. Regarding layers and networks, Gulick may have been forward thinking – and acting – by using *multiple social inheritance*.

7. SUMMARY

From Gulick's New York City plan, and later with the Executive Office of the President, he appears to have used object-oriented, pattern-based techniques. Some were like PIE. These instances of place and time – occurring in

a country's largest city, and for a president prior to war – were significant. Should lesser patterns of administration prove to be underlying, one would suspect the practitioners of administration would find them useful. They could be inherited from the base, and used in their own contexts.

If elements were derived – from a Mayor to an assistant Mayor, or from an Assistant Mayor to an Administrator – then *multiple* inheritance is implied. Note how the number of mid- to low-level patterns (or idioms) could be numerous. It is possible that the elements of POSDCORB are among the topmost "base classes." Due to their abstractness, it is likely that mid- to low-level patterns would be inherited from a POSDCORB-based framework.

A leader must be honest in assessing the progress of a pattern, a staffing delegation, or the completion of a task. If a problem persists, or has a high number of aspects, it should receive higher attention. More resources in the form of planning, staffing, directing, or budgeting may be needed. A way to address a persistent problem is through reorganization. Past examples have been provided. But a recent example within the American states can be found in the Department of Homeland Security (although smaller reorganizations are more likely). A decentralization of functions may be needed and the POSDCORB patterns, with *multiple social inheritance*, may be a way of getting there. With modern communications, remote decision-making can be facilitated. In these localized instances, most, if not all of the POSDCORB patterns are shifted outward. The "invariants" would still be present, but perhaps in more locations. With a pattern of presentation (below), the structure follows.

8. STRUCTURE

The structure of the patterns will be written in a variation of Alexander's format. The unit of analysis is an organization. However, with coordination, layers, and interfaces, inter-organizational tasks may be accomplished. Here in, we will explain why obvious solutions will not work and some solutions will work. For these high level (two asterisk) types, references will be made to many others. Beside these, the structures include:

Name in bold
Image
Alias
Synopsis/Quote in bold
Context
Problem statement in bold
Description of the Problem and Forces
Solution in bold
Resulting Context
Related Patterns

The Names (bolded) were derived, and deemed valuable, from the author's personal experience. In all cases these were aligned – in aggregate – with POSDCORB. An image is provided. The Aliases quickly link the pattern in question to the POSDCORB framework, as well as other possible patterns or concepts. The Synopsis/Quote (bolded) is one or two sentence abstract summarizing a pattern, and in all these instances, they were penned (early on) by Gulick [1937a]. Note how he alludes, within each, to the possibility of broad discourse – and others should be motivated to find more applications. To limit our scope, the Context may indicate one or more of the following questions: where does the problem exist? . . . what is the relevancy? . . . who is the target audience? . . . and/or why are there constraints? The Problem statement (bolded) indicates what problem is being solved. Importantly, it builds upon the context, as well as providing indications how the problem fits a particular situation. The Forces indicate why a problem is so difficult, problem tradeoffs, constraints over which control may be possible[4]. The solution/resolution (bolded) succinctly states the action that should be taken to resolve the problem.

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[4]In a constitutional realm, some contexts may be enduring.

This also includes results. A Resulting Context indicates the situation after the problem has been solved. It is quite possible that other problems will have been introduced and Related Patterns will be suggested [Hammer et al. 2010].

Note how it is acceptable for a pattern to have negative consequences[5]. Also note, the first force and first solution will be complex, with more concise forces and solutions to follow. Lastly, the "master" POSDCORB pattern – at the most coarse-grained level – is called a *framework* pattern [Buschmann et al. 2007]. Allowing for the uniqueness of this frame, the subordinate POSDCORB patterns, as well as their interrelations, are presented first. Thus, the master will be reintroduced, but only after the reader gains familiarity with its parts.

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[5]Many solutions have negative consequences. It is important that the intermediate effects are worth the long run effort. The bad consequences (i.e. liabilities) may need follow-up patterns to resolve them. One pattern may have seven liabilities that are then solved by the remainders.

Planning∗∗   **Alias – P**

"Working out in broad outline the things that need to be done and the methods for doing them to accomplish the purpose set for the enterprise" [Gulick 1937a, p. 13].

Organizational staff members need to plan for change.

Staff need different skills for planning. These include long-term for capital projects, medium-term for staffing, and short-term for day-to-day operations.

Plans are needed to facilitate the continuity of services and organizational change, but this is complex due to environmental interfaces.   •

Political forces may influence an executive plan and budget.   ••

Constituent growth may force the need for a capital budget.   • • •

Because of specializations, enterprise-wide planning may be difficult.   • • ••

Day-to-day emergencies must be anticipated, at least to the extent possible.   • • • • •

Inter-organizational projects may invoke procedural or technological factors.   • • • • ••

Reorganizations may increase or decrease organizational domains.   • • • • • • •

• Divide and rotate staff members to share practices and attain skills in long-term, medium-term, and short-term planning. •• Share political and institutional knowledge. • • • Forecast constituent populations and requirements. • • •• Promulgate best practices. • • • • • Foresee possible emergencies. • • • • •• Identify organizational contingencies. • • • • • • • Identify interfaces and relationships for designs.

Resulting Context: Staff members will become aware of the varied planning requirements of an organization (i.e. forecasting and foreseeing).

Related Patterns: Organizing, Staffing, Directing, Coordinating, Reporting, Budgeting, Plan [Fowler 1997].
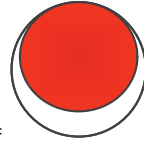
Organizing∗∗   **Alias – O**

"The establishment of the formal structure of authority through which work subdivisions are arranged, defined and co-ordinated for the defined objective" [Gulick 1937a, p. 13].

Organizational staff members should work efficiently and effectively.

Organization is a prevalent concern. Centralization facilitates control, but often yields reports which are too general for managerial use. Decentralized staff members are often aware of special situations that do not fit central decision-making.

Organizations need to facilitate workflow change, but this is complex due to aspects of personnel resistance and increased/decreased workloads, although economies of scale and control can be achieved.   •

Budget factors, primarily reductions in revenues, have constraining impacts on efficiency.   ••

To achieve economies of scale or control, organizations are forced to centralize.   • • •

Politicians try to change the budgetary plan of an organization.   • • ••

Needs exist for decision-making to be timely and decentralized.   • • • • •

Many local processes cannot be standardized.   • • • • ••

Modern projects are increasingly inter-organizational.   • • • • • • •

• Circulate organizational tasks between staff at central administration and decentralized locations depending on performance and goodness of fit. •• Plan for budget contingencies. • • • Encapsulate to invoke control. • • •• Present and explain budgetary contingencies. • • • • • Delegate decision-making authority. • • • • •• Identify interfaces and aspects of local processes. • • • • • • • Communicate inter-organizational contingencies and consider a reorganization.

Resulting Context: Staff members see the benefits of centralization, yet they may also become appreciative of more peripheral agency requirements.

Related Patterns: Planning, Staffing, Directing, Coordinating, Reporting, Budgeting, Organizational Hierarchies [Fowler 1997], Form Follows Function, Organization Follows Location, Organization Follows Market, Three to Seven Helpers per Role [Coplien 1995].
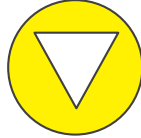
Staffing∗∗   **Alias – S**

"The whole personnel function of bringing in and training the staff and maintaining favorable conditions of work" [Gulick 1937a, p. 13].

Specialists are focused on specifications at the center core. Generalists need to know nearly everything at remote peripheral locations.

Many different aspects of staffing exist. Specialists are expensive and may not be readily available. Generalists may never learn proficiencies due to a lack of iterations.

Staff members are necessary to facilitate organizational change, but skilled workers and change agents are difficult to hire, although they usually stay in bureaus once in place.   ●

Budget calendars delay the hiring of staff.   ●●

Costly training keeps a generalist from becoming a specialist.   ● ● ●

The chain of command for generalists can be ambiguous.   ● ● ●●

Specialized needs originate from disparate locations.   ● ● ● ● ●

Changes in rules are not organizationally communicated.   ● ● ● ● ●●

● **Rotate staff between specialized positions and generalized functions to make them aware of organizational situations. ●● Direct staff to monitor or administer their budgets. ● ● ● Train and cross-train whenever possible. ● ● ●● Acknowledge good administrative judgment. ● ● ● ● ● Designate points of contact. ● ● ● ● ●● Hold supervisors accountable for work performance.**

Resulting Context: Staff members may become more adaptable to organizational change whereby specialists can discern the work of others. A grouping of positions may reduce costs. Where groups cannot be combined, liaisons may be established.

Related Patterns: Planning, Organizing, Directing, Coordinating, Reporting, Budgeting, Post [Fowler 1997], Solo Virtuoso, Domain Expertise in Roles, Phasing It In, Apprentice [Coplien 1995].

Directing∗∗ **Alias – D**

"The continuous task of making decisions and embodying them in specific and general orders and instructions and serving as the leader of the enterprise" [Gulick 1937a, p. 13].

Directors must address environmental influences on an organization such as the needs of people, frames of constitutions, morality and ethics, as well as elements of justice and welfare. Concurrently they must face politicians while addressing efficiency, decision making, policy making, and conflicting values. Thus, they are exposed to wide-reaching influences.

Directing invokes the most diverse and numerous aspects. Those with the authority to direct cannot always be omniscient. Unknowns may include the media, political change, and/or emergencies.

Directing is necessary to provide organizational guidance, but aspects of constituents and politicians are numerous and litigious, although personal values may align. •

A growth of constituent populations invokes organizational change. ••

Bureaucracies are legally bound, lacking power, and limited in discretion. •••

External and/or political forces lack rationality. • •••

Issues of administration jeopardize the continuity of services. •••••

The administration of personnel hiring processes is slow. ••••••

Public policy is un-implementable. •••••••

Inter-organizational projects lack priority and/or authority to implement. ••••••••

A lack of budget and/or personnel resources impacts performance. •••••••••

• Delegate planning, organizing, staffing, coordinating, reporting, and budgeting to competent and loyal staff. •• Acknowledge limitations and accountability. • • • Seek enabling legislation, facilitate communication, and invoke jurisprudence. • • •• Develop viable alternatives. • • • • • Facilitate resource back-ups. • • • • •• Prioritize critical hiring while promoting from within. • • • • • • • Propose viable alternatives. • • • • • • •• Promote data interfaces. • • • • • • • • • Identify budgetary requirements and contingencies.

Resulting Context: Upon direction, staff may become more adaptable to organizational change, knowing others are covering other administrative areas. Lacking specific knowledge, the Director may discern the impact of cutbacks and the development of alternatives (or attainments of success) from those who are the most focused.

Related Patterns: Planning, Organizing, Staffing, Coordinating, Reporting, Budgeting, Take Your Licks, Show Personal Integrity [Rising 1999], Phasing It In [Coplien 1995].

Coordinating∗∗   **Alias – CO, Co-ordinating, Control, Collaboration**

"The all important duty of interrelating the various parts of the work" [Gulick 1937a, p. 13].

Staff members need to balance coordination and control.

Many different degrees of coordination exist. If controlling an organization and a change is necessitated, the entity may lack a goodness of fit. If coordinating organizations, a lack of standardization may occur.

A complex balance must be achieved when controlling, coordinating or collaborating on tasks, but the staff of an organization must be delicate when they lack authority, although power is usually recognized.   •

Controls and standardization do not work as originally envisioned.   ••

Coordination may lack, procurements may be haphazard, or the hiring of staff may occur without approval. • ••

Lacking goodness of fit, inquiries may follow regarding organizational leadership.   • • ••

A "base" budget must be developed regardless of revenues and expenditures.   • • • ••

• **Consider gradual fluctuations between coordination and control, based on performance and good-ness of fit, provisions of power, and the ability to budget resources.** •• **Promulgate standards to identify aspects.** • • • **Lacking authority, attempt to legitimize ideals.** • • •• **Consider functional reorganizations.** • • • • • **Maintain budgetary control.**

Resulting Context: Staff members may become more adaptable to organizational change, perceiving when to control and when to coordinate.

Related Patterns: Planning, Organizing, Staffing, Directing, Reporting, Budgeting, Account, Posting Rules, Contract [Fowler 1997], Business Transactions, Business Accounts, Composite Transactions, Adjusting Transactions [Anthony 1996b].
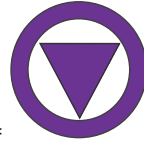
Reporting∗∗   **Alias – R**

"Keeping those to whom the executive is responsible informed as to what is going on, which thus includes himself and his subordinates informed through records, research and inspection" [Gulick 1937a, p. 13].

Staff or processes may address the media, external politicians, statistics, budget status, or the need for periodic feedback.

Reporting involves numerous aspects. Capabilities may be limited, including remote locations, unanticipated requests, rigid requirements, lack of data, or a reliance on inter-organizational sources.

Organizationally mandated records must be maintained, but the complexity of technology and the lack of staff delay projects, although procedures become established.   ●

The "chain of command" for generalist staff reporting may be ambiguous.   ●●

Requests for information may be non-routine.   ● ● ●

Ad hoc requests for information may come from the media, politicians, or others.   ● ● ●●

Reporting may be required for the performance associated with a budget.   ● ● ● ● ●

Assessments of organizations and statistical metrics may be difficult to obtain.   ● ● ● ● ●●

Reporting to/from inter-governmental entities may lack established controls.   ● ● ● ● ● ● ●

Public sector criteria and/or private sector measurements may be incompatible.   ● ● ● ● ● ●●

● **Maintain records and files, research efficient processes, rotate competent staff, and document established processes. ●● Acknowledge good administrative judgment. ● ● ● Develop a survey/standardized form. ● ● ●● Analyze requests for information. ● ● ● ● ● Link performance metrics to aspects of a budget. ● ● ● ● ●● Identify criteria from similar organizations. ● ● ● ● ● ● ● Develop formalized interface agreements. ● ● ● ● ● ● ●● Explain uniqueness of service.**

Resulting Context: Staff may learn the other organizational requirements related to supervision and records management, including the standardization of staffing, inputs and outputs

Related Patterns: Planning, Organizing, Staffing, Directing, Coordinating, Budgeting, Measurement, Observation, Rejected Observation, Active Observation, Hypothesis, and Projection, Balance Sheet and Income Statement, Outcome and Start Functions [Fowler 1997], Posting [Anderson 1999], Continuous Processing [Anthony 1996b].
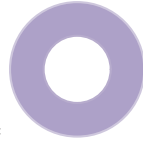
Budgeting∗∗   **Alias – B**

"All that goes with budgeting in the form of fiscal planning, accounting and control" [Gulick 1937a, p. 13].

Staff members need to justify, secure, execute and control a budget.

Budgeting permeates organizations. Budgetary planning may need to be annual with a shortened periodicity, long-term for a set of periods, emergency-based, or continual.

Budgets are needed to facilitate continuity of services, maintenance of resources and/or organizational change, but this is complex due to environmental or political aspects, although those in power realized budgetary importance.   ●

The growth of constituents is often pervasive.   ●●

Programs may encounter revenue shortages.   ●●●

Emergency situations may force unexpected expenditures.   ●●●●

The costs for capital buildings (i.e. institutions/facilities) are high.   ●●●●●

Economic forces may exist which are often beyond an organization's control.   ●●●●●●

External political forces and their associated values are influential.   ●●●●●●●

Irrational budgetary constraints may be encountered.   ●●●●●●●●

● Control accounting to facilitate base budgets, as well as incremental increases/decreases; project forecasts of short- and long-range plans to maintain operations; develop budgetary contingencies in an attempt to address foreseen/unforeseen problems and/or issues. ●● Forecast constituent populations and requirements. ● ● ● Decrease expenses, propose revenue increases or identify contingencies. ● ● ●● Explain "one time" expenditures. ● ● ● ● ● Prioritize capital expenditures based on analysis/funds. ● ● ● ● ● ● Develop models of economic aspects. ● ● ● ● ● ● ● Articulate budgetary contingencies. ● ● ● ● ● ● ● ● Explain budget sufficiency.

Resulting Context: Staff members may become more adaptable to organizational change, and further, the continuity of organizations is more likely. Continued maintenance due to growth may be accommodated. An increased level of preparedness may exist in case of emergencies.

Related Patterns: Planning, Organizing, Staffing, Directing, Coordinating, Reporting, Measurement, Observation, Rejected Observation, Active Observation, Hypothesis, and Projection, Balance Sheet and Income Statement, Outcome and Start Functions [Fowler 1997], Posting [Anderson 1999], Continuous Processing [Anthony 1996b].
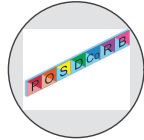
POSDCORB∗∗   **Alias – Work of the Chief Executive [Gulick 1937a]**

POSDCORB is a "word designed to call attention to the various functional elements of the work of a chief executive" [Gulick 1937a, p. 13].

Modern organizations are complex. Administration is essential in dealing with uncertainties. Planning, Organizing, Staffing, Directing, Coordinating, Reporting, and Budgeting can help meditate uncertainty. The larger the organization, the more likely staff will be specialized. Large organizations often have Administrators who have come "up through the ranks." Functionally specific knowledge is required while specialized; however, broad knowledge of an organization – as well as inherent boundaries – is necessary for effective leadership. This extends to inter-organizational, political and environmental factors as well.

Leaders must be enlightened on organizational factors. The higher one ascends in an organization, the more knowledgeable they should become aware of patterns. The chief executive needs to be omniscient in their task of administering. Experts tend to assume knowledge and authority in fields in which they have no competence. A government which ignores the conditions of efficiency "cannot expect to achieve efficiencies" [Gulick 1937a, p. 11] (bold added).

Plans will be needed to facilitate continuity of services and organizational change.   ●

Processes and procedures will need to re-organize inefficiency.   ●●

Staff members may seek administrative judgment.   ● ● ●

Leadership is required to facilitate direction.   ● ● ●●

External political/environmental forces need to be coordinated or controlled.   ● ● ● ● ●

Constituents and inter-organizational entities will seek action and/or information.   ● ● ● ● ●●

A budgeting of resources (i.e. revenues and expenses) has to be administered.   ● ● ● ● ● ● ●

● Prior knowledge of core patterns help facilitate administration. ●● Organizational relationships should be shared between staff. ● ● ● Jurisprudent staff should be part of an executive team. ● ● ●● Direction should be tactfully provided with coordination and control. ● ● ● ● ● Points of contact should be designated for organizational interfaces. ● ● ● ● ●● Technologies should be employed for prompt and accurate reporting. ● ● ● ● ● ● Budgets should be controlled and coordinated.

Resulting Context: The Chief Executive, or designee, can achieve greater degrees of calmness and confidence, knowing they have considered some enduring administrative patterns.

Related Patterns: Seven Parts, Visible Checklist [Anthony 1996a].

9. DISCUSSION

The purpose of this section is to reflect upon the structure. The patterns from the prior section will be assessed, as well as the framework-based techniques. Gulick [1937a] called out names and synopses for seven patterns. It is possible he perceived them intuitively. His research, the reorganization of New York City, and the need to simplify scholarship may have been influential. As early as 1933, he and others agreed that a discussion of "the administrative role of the chief executive would be necessary" [Fry and Raadschelders 2014, p. 116]. During a world war, he could not defend – or elaborate upon – his "Organizational Patterns" [Gulick 1937a, p. 11]. Yet, he was aware of the challenges for a president. With a disciplined approach, the patterns were, indeed, extendable. Due to the layers described by Gulick, the highest lack specifics. Still, it may be possible to *connect the dots* [Thorne 2012] and begin thinking more administratively.

Alexander's [1977] *A Pattern Language* book has 253 patterns. It is possible the count of administrative patterns is proportional. The structure of the patterns above – P-O-S-D-CO-R-B – reveals numerous **Forces**. Some can emerge over time or appear arena-like. Admittedly, some **Solutions** do not always apply. But the complexity of administration – to the degree empowered – is portrayed. The **Solutions** used to bring about an awareness of the **Forces** could be many. Gulick's "bases" (or Thompson's versions) reveal pattern-based dimensions.

10. ASSESSMENT OF TECHNIQUES

Careful reading shows how those "bases" are candidates for *social encapsulation*: grouping or organizing by purpose, process, persons or things, and place. But just as both Gulick [1937a] and Thompson [2003] observed, they might *not always* apply. For example, Rosenbloom [1998] extended these bases by suggesting functional groups. But, in terms of efficiency, economy and effectiveness, he also developed nearly equal numbers of advantages and disadvantages [Rosenbloom 1998]. Encapsulations *can* apply, but not always.

Other design techniques are associated with frameworks, patterns and classes. In one passage of "Notes...," *polymorphism* (**Directing** by general and specific orders) can be found. With his New York example, as well as in the abstract, Gulick discussed the passing of Commands through multiple layers. From the section above, this involves *inheritance*, and *multiple inheritance*. Yet, within Gulick's levels, the possibility for an "empty" class (i.e. pass along), including a top-level "base" class, is very real.

Thus, it is likely that all POSDCORB patterns are within organizations, but one (or more) could be grouped beneath another. From Sidney Gulick [1915], a seasoned missionary, structures, then as now, involve groups of people, language, and Social Inheritance. The term *Multiple Social Inheritance* was coined (above) and derived, in part, from the younger Gulick's lineage – as well as his grappling with modern-day organizational complexities.

In an earlier section, the author requested that the concepts of Command-and-Control be set aside. Now it is time to re-gather. *Multiple Social Inheritance* can apply when using the CO pattern. With care to acknowledge the work of Mary Parker Follett [2001], the delegation of a task is, in part, a Command. In a prior analysis, Command may be associated with Directing, and Gulick's CO could be either Control or **Coordinate**. Figure 1 suggests those factors can shift over time and, in an early model, the degree of power or authority may have influence [Chalekian 2013]. Sometimes, but not always, Command applies. Considering multiple levels, a new definition of *Collaboration* can be developed, via pass along, as follows: if the power or authority to command, control or coordinate is lacking, then collaborate. This progression can be found in the CO pattern. Gulick's POSDCORB is extendable to include the three elements above, as well as communication and more.

11. SUGGESTED REFINEMENTS

One may detect the PIE definitions refer to abstract terms. To clarify an approach (used by father Gulick), a *social-*prefix was used. To socialize inheritance, it may be appropriate to switch the words behavior and information, and also add the phrase "or values or sufficiency" after the word "behavior." (Behaviors should not always be passed along.) The new definition becomes a language which supports the definition of a new entity as an extension

of one or more existing entities, such that the new entity inherits existing information and behavior or values or sufficiency. The same goes for the definition of Encapsulation, with the term *Socio-encapsulation*, and the phrase – "or values or sufficiency" – with *two* behavioral references. Organizational polymorphism may be a better name for the third definition, as well as adding the words "or people" after the word "objects." This would accommodate social media devices or people.

Building off the work of Adele Goldberg [Goldberg and Rubin 1995], the term *Socio-encapsulation* can be refined, and redefined, as having features whereby the language supports the representation of information and information processing as a single unit that combines behavior or values of sufficiency with the information needed to carry out the behavior or values or sufficiency. Building further off their ideas [Goldberg and Rubin 1995], as well as empirical assessments of administration [Chalekian 2013], *Organizational Polymorphism* has features of the language making it possible to send the same message to different objects or people and elicit a distinct but semantically similar response from objects or people, with coordination and control.

But why add values? With the *Directing* pattern, the concept can be important in both the Context and Force. Recall how mayoral values may be "passed along" through assistants, and throughout an organization. If the top executive *cannot* take action (or the empty "pass along" does not work), subordinate judgment must be used at lower levels (review footnote 2). For the 3rd Force in **Directing**, the 3rd Solution suggests facilitating communication and invoking jurisprudence. Lacking legislation, policies or procedures, apply values with judgment.

But why add sufficiency? Often public administration involves budgets. Readers are encouraged to use judgment to discard or replace Solutions. The treatments above originated largely from experience. If one takes issue with a glaring omission, perhaps this practitioner has not encountered it (or it was less relevant to the author's situations). Scholars seek to establish and refine frameworks (c.f. [Ostrom 1999]). And frameworks have multiple layers and levels of analysis [Ostrom 2005]. Gulick integrated a frame from which patterns could extend.

Unless framework attributes are recognized, they may go unnoticed [Chalekian 2013]. The POSDCORB patterns may represent the "True Invariants" of an administrative framework. Per Gulick [1937a], none of the POSDCORB functions should reside outside of the chief executive, including the office of a president. He added "they are and must remain parts of him" [1937a, p. 14]. Usually positioned near the top-most "base" classes, they must be considered as part of an administrator's "core."

Lastly, a lengthy argument has clouded studies of public administration and organizational theory. It is hoped the patterns and techniques provide clarity. It is not that scholarly arguments (e.g. [Simon 1997; Waldo 1948]) are unhelpful; it is just that the pattern-based techniques of Christopher Alexander and the Hillside Group were long overdue. Finally, one may ponder if Gulick really believed in the value of patterns? According to Gulick, "nothing must take second place to our effort to understand the patterns of human awareness and how men who are working together in teams can find release for their full energies" [1935, p. 75]. Many did not use gender-free pronouns until the 1980s, but Gulick's concerns for the patterns of human awareness were indeed genuine.

12. CONCLUSION

By extending the POSDCORB patterns, the complexity of administration is clear. Again, these are not the only administrative patterns, but they may be representative of a "core." Not all solutions to *all* administrative problems were provided, but an appreciation of administrative roles can be gained as they work in arena-like contexts. They may involve legislative, judicial or constitutional aspects. And, these positions are not for the timid.

By using the techniques of the Hillside Group's patterns community, an articulation of Gulick's patterns was achieved. POSDCORB is a framework. Positioned as such, additions to and extensions of the frame are encouraged. But improvements at the highest level will need to be encapsulated, with interfaces for inheritance, and considerations for polymorphism. The **Directing** pattern, along with the six (6) other patterns, will likely endure. The next step may be to develop more patterns. In doing so, many lower-level, day-to-day patterns (i.e., fleets and purchase orders) can be linked. Future studies may involve the application of *multiple social inheritance* to

other complex frameworks. Alexander [1977] described patterns as happening a million times over. With Gulick's "true invariants," broad-based patterns can be discerned at the administrative core.

13. ACKNOWLEDGMENT

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