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NETWORKS, HIERARCHIES, AND HYBRIDS

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ABSTRACT: *Clusters of organizations making at least modest efforts to collaborate on implementing joint solutions to public sector problems are often called “networks.” By directing attention away from the hierarchical aspects of these clusters, and towards the voluntaristic and egalitarian aspects, this nomenclature can undermine and distort our understanding of the phenomenon. Such organizational clusters can be more fruitfully thought of as “implementation hybrids,” a type of collective production arrangement that has its own distinctive strengths and weaknesses, which this article delineates.*

INTRODUCTION

“Networks” were discovered some 25 years ago as yet another way of organizing a population of individual agents for collective production. The network mode was offered as an alternative to hierarchy and to markets (Powell 1990). Compared to hierarchies, networks were informal, voluntary, and driven by expectations of long-run as well as short-run reciprocity. With regard to performance, they could be more flexible, more nimble and, as a result, in some environments and for some tasks, more efficient. Compared to markets, which were full of self-interest, calculation, and short-term utilitarianism, networks were more relational, humanistic, and multi-dimensional; they could also function when price signals were absent or misleading.

Perhaps because networks, hierarchies, and markets were spoken of as Weberian ideal types, the assumption in this early literature was that they would be instantiated as recognizably different entities. The idea of combinations, of hybrids, was not on the table. Over the years, however, the public management literature on networks has allowed hierarchy to creep back in, both conceptually and empirically. Scholars have referred to networks as “governed,” “managed,” “administered,” “directed,” “led,” and “guided” (McGuire 2003; Goldsmith and Eggers 2004; Agranoff 2007; Herranz 2008; Provan and Kenis 2008; Bertelli and Smith 2009).

In their recent study of successful criminal justice networks in the UK, Kelman, Hong, and Turbitt (2013) describe them as being managed in a style they call “hierarchy light.” One of the pioneering public management studies of networks (Provan and Milward 1995) has referred to some of them as “centralized,” which can arguably be interpreted not just sociometrically but in a power-differential sense as well. This interpretation is suggested by the commonplace complaint by agencies in their most centralized research site, Providence, RI, that the core mental health agency was “bureaucratic,” “insensitive,” and “arrogant.”

What is afoot here? Consider some possibilities:

- The scholarly conception of a network has undergone change, as scholars have become more sophisticated.
- There are many kinds of networks (Berry et al. 2004; Isett et al. 2011). Although all are a type of multi-agent collective production system, they differ in many ways according to what they produce or do. They might conjure with policy ideas, manage knowledge, share practice, decide policy, or implement programs (Kamensky and Burlin 2004). Some of these types of network are more hierarchical than others. A good example is the type of network that is prominent (though not exclusively so) in *Governing by Network* (Goldsmith and Eggers 2004). This type is held together by a web of contracts largely administered by a single agency and to a large extent paid for by this agency. The vision and judgment of this agency dominate. It is in most important respects a hierarchy, except that some dominant agencies manage subordinate agencies by means of the contracting mechanism rather than by legal means.
- The concept of a network is more about process than about structure. Thus, even if structural hierarchy is present, network process might dominate our conception of the system as a whole (Herranz 2008). “Network” is a figure of speech, like “going by bus” or “rushing the basket.” It is intended to be broad and non-committal with regard to specifics.
- Using the term is not “non-committal,” it is simply sloppy.
- There is a widespread empirical mistake: observed hierarchies are being misclassified as networks. Given the popularity of the network idea, any working relationship that is informal or can be called a “partnership” or “network” will qualify, no matter how much one organization’s views or desires tend to dominate.
- There is an equal and opposite empirical mistake: observed and real hierarchies do not actually behave very hierarchically. Many have been flattened through “reinvention” and a general move to push the knowledge and experience of field operatives upward to senior managers. This is especially true in organizations with lots of professionals who demand and deserve respect. As Agranoff observes (2007), citing Saint-Onge and Armstrong (2004), lots of what passes for hierarchy is actually a much more equalitarian “collaborarchy.” Many a hierarchy looks enough like a network so that when the two forms co-occur in a hybrid, clear classification is difficult.
- There is a mistake, but it is not empirical, it is conceptual. It is what philosophers call a “category error.” That is, linguistic usage treats diverse phenomena as a

single “natural kind,” and tries to explain variation among these phenomena when there is no naturalistic basis for doing so. An example is trying to construct a “general theory of holes.” The error is particularly harmful when it refers to a concept that is treated analytically as a dependent variable.

No doubt all of these processes are at work. This article concentrates on the last two, however. Hybrid systems constituted of subsystems that are both network-like and hierarchical really are what they appear to be; namely, hybrids. Treating them as though they were simple networks misconstrues the specific phenomena at issue, the workings of networks in general, and how network/hierarchy hybrids function. It particularly misconstrues the nature and contribution of the hierarchical element. I shall try to clarify this last point by way of conclusion, but I will lead up to it by first trying to understand the general nature of network/hierarchy hybrids.

What is “Understanding” Anyway?

“Understanding” has a special meaning when the term is applied to systems of action that introduce a large component of artificial design, such as virtually any human institution, and especially an organization intended to accomplish human purposes. A hierarchically organized single agency is one such system, a network of these agencies is another, and a combination—but don’t call it a “network”—of agencies that somehow work collaboratively is a third.

The conventional, and most common, understanding of such a system rests on the explanation of cause-effect relationships. And since the most used tests for such explanations involve accounting for variance, the theoretical idea of “understanding” gets identified with the mysterious “causal relationships” between whatever realities are allegedly reflected in the “variables” chosen for the tests. Take a dozen public schools and a dozen private schools, for instance, all hopefully serving similar students, and compare their learning outcomes, their teaching styles, and their management properties. In some contexts, this reaching for understanding through explanation of variance, whether or not successful, is satisfactory. It works best when the systems in question are relatively simple, with cause-effect relationships that are fairly linear. But it is not very satisfactory when applied to the question of how some very complex system works, typically one that has been purposely engineered and is full of feedback loops.

“Satisfactory” in this context implies “satisfying”; that is, satisfying the purposes of the questioner in posing the question in the first place. I posit that the purposes of inquiry in cases like this reflect an interest in the creation and management of such systems, and that this interest is closely tied to the ingenuity one might find in the system’s design and operation. Furthermore, ingenuity, in this context, typically has to do with cost-effectiveness, broadly construed. “How do they get all those buses and all those would-be bus patrons to match their locations and their schedules?” “How did they manage to create our wonderful national park system when most of the taxpayers supporting it would probably never have imagined they would

themselves actually use it?” “How did they get those immigrant kids from low-income families to be so interested, and so good at, high school calculus?”

My answer to the question of “understanding” complex artificial systems will be elaborated in the following, although far less so than it deserves. I raise the question here of understanding such systems partly because I intend to apply the answer to the specific question of how hybrids work but also because I hope to stimulate professional thought about the broader epistemological (and ultimately ontological) issues such an effort must entail.¹

The Incident Command System

Although the conceptual strategy relies largely on ideal types, I begin the argument with an example. It is a thoughtful and well-researched study by Donald Moynihan of a hybrid, an Incident Command System (ICS), that successfully managed an epidemic of Exotic Newcastle Disease (END) among poultry flocks in Southern California in 2002 (Moynihan 2008). The outbreak provoked an energetic public response. It entailed quarantining and then inspecting thousands of commercial and backyard poultry-raising facilities in several counties of Southern California and of some nearby states and the destruction of some three million birds.² The main response agencies were the federal Animal and Plant Inspection Service (APHIS) of the US Department of Agriculture, the Animal Health and Food Safety Services (AHFSS) of the California Department of Food and Agriculture, and state and federal forest agencies. Other involved California agencies were the (state) Environmental Protection Agency, the Department of Health Services, the Office of Emergency Services, and the California Highway Patrol. These various agencies plus some lesser ones were organized according to an ICS framework, which had originally been developed in the early 1970s by federal, state, and local agencies in California that regularly needed to coordinate their efforts fighting fires in woodlands and in urban-rural interface zones.

The ICS framework calls for an “incident commander” responsible for “organizing the basic managerial functions required for most crises: operations, logistics, planning, finance and administration.” (Moynihan 2008, 356) In the END case, a prototypical operation involved a report to the central command (jointly controlled by APHIS and AHFSS) from some inspection team in the field that Farm A, in a hitherto uninfected area, showed definite signs of the virus in its poultry flocks. The central command then dispatched Team G to cull the flocks, Team H to institute quarantine procedures, and Team J to communicate the hazard to the nearby Farms B-E. All this was done with maximum speed, probably within hours.

The basic system of action included all of the relevant farm personnel and many public and private organizations and their thousands of personnel who were potentially able to address the problem, either in the planning or in the operational phase. All told, at various points in time, some 7,000 individuals were involved in the planning and execution of the effort.

From Moynihan’s account, it appears as though relatively egalitarian, network-like relations obtained while the agencies were pledging resources and the plan of

operation was being worked out, but that during the crisis itself the agencies were coordinated hierarchically. The cession of power to a joint APHIS-AHFSS leadership was planned as a Lockean act of delegation to a legitimate authority to make good use of the several parties' resources and professional competencies.

Should we consider the ICS in this case as a "network," as Moynihan does, or as a "hierarchy?" The answer is ambiguous, and the ambiguity is instructive. If an observer were to choose only one label for the ICS structure, it would have been reasonable to call it either a hierarchy or a network. And indeed, Moynihan recognizes that, analytically, the blend of network and hierarchical relationships in the ICS framework needs special handling. He tips his hat to the hierarchy perspective: "Consistent with the partnership that AHFSS and APHIS had developed, they formed a joint command to run the ICS headed by one commander from each organization." But it is the network perspective that in the end is more fundamental: "The ICS essentially overlays a hierarchical structure on a network, using a central command to manage conflict, coordinate action, and reduce classic network characteristics, such as a reliance on consensus." (p. 356). He concludes that the ICS "appeared to work well, and network members saw the ability of the key agencies involved to work together as a major success factor . . ." (p. 356).

But why should we think that it is the network that is fundamental and the hierarchy that "overlays" it rather than the other way around? One could wonder if his report and analysis would have differed had he looked primarily through the hierarchy lens rather than the network lens; that is, had he written instead: "The ICS essentially overlays a network structure on a hierarchy, using decentralized initiative and informal and formal channels to reduce classic hierarchical characteristics, such as a reliance on communications up and down through the chain of command." Moynihan's account makes the network primary and the hierarchy secondary, whereas the latter formulation reverses these two positions.

Might this hierarchy-first perspective have made much of a difference in how we see the workings of the ICS? Perhaps. We might have had our perceptions guided more towards the way the ICS used leadership as an instrument in forestalling or settling disputes, setting up trainings for volunteers and newcomers, strategically deploying equipment and personnel, and insuring and editing collective memory and documentation. But an even more significant change in our perceptions might have come about had Moynihan used primarily neither a hierarchical nor a network lens, but instead a lens that focused on the hybrid character of the ICS. This lens might have drawn attention to the functional complementarity of both network and hierarchy, as each mode of action was relevant during one phase of the life of the ICS but not so much during the other. This indeed was the most striking aspect of the END ICS: the remarkable capacity of the system to morph from network to hierarchy as the situation—the outbreak of the emergency—required, and then, presumably, to morph back again. Being so polymorphous is a relatively rare quality in an organization. It is certainly not recognized analytically. Perhaps we need to rely on the "hybrid" construct to give it some breathing room.

The Exotic Newcastle Disease ICS is, of course, an extreme, and no doubt unusually clearly etched, example of the sort of a collective production hybrid.

Its clarity, however, helps us understand the qualitative lineaments of the more general case.

Understanding Production Systems

As noted in the introduction, networks, hierarchies, and hybrids are species of a larger genus: collective production systems. To understand such systems, we need to begin with a conceptual framework. The most basic element of this framework is the degree of success with which this output is produced. The second most basic element is the way resources, broadly considered, are employed in a technical manner to accomplish this. This means that, typically, “understanding” must focus on effectiveness and cost-effectiveness. Following this, political and institutional constraints on technical arrangements must be mapped. And for our last fillip of understanding, we need to see how effective and ingenious leadership might be able to offset these constraints to some degree. Any such system is inevitably complex. Simplification—stylization—is needed. As a tribute to simplification, our conceptual framework will have only four levels. But complexity must be acknowledged by drawing attention to the fact that the levels are tiered in a certain way. At any point in the tiering, it is the lower ones that, through their design and operations, create the requirements presented to the levels just above. One cannot understand the higher levels without first understanding the lower ones. Schematically, Level One is a reservoir, a value potential that exists in “social nature,” although passive, and it is the foundational tier; Level Two is the machinery that taps into this potential and channels it in certain ways; Level Three is the set of dynamic processes that Levels One and Two set in motion; and Level Four is the limits and vulnerabilities that inhere in the way the previous three levels interact. This abstract account will become more meaningful as the discussion proceeds.

Level One: Natural Reservoirs of Potential Value

A useful way to understand Level One, the natural reservoir of potential value, is to ask what a system “takes advantage of” in order to produce its output. Consider the internal combustion engine as a productive system. It works in part by extracting and channeling the energy in the bonds of hydrocarbon molecules. This potential energy is a natural reservoir of power. The internal combustion engine is an ingenious way of taking advantage of this potential. In the world of social, rather than physical, systems, consider a marketplace. It produces a utility-increasing reallocation of goods by taking advantage of the potential for gains from trade. This potential is free, and the process of trading is an ingenious mechanism for tapping it. In this case, the potential can be thought of as “value,” which includes power but is more general. To take one further social example, consider the use of appointments made online or by telephone at your local Motor Vehicles office to renew your driver’s license. Compared to the relative inefficiencies that queuing theory tells us follow from random arrivals, ordering these at relatively constant intervals increases

utility for both service personnel and citizens. The potential for order contains the potential for utility—or value—enhancement and is free.³

Level Two: The Machinery for Extracting Potential Value

Actualizing such potential requires some sort of machinery to extract and channel it. In partial contrast to Level One, while this machinery might be relatively low-cost, and therefore relatively ingenious, its costs may nevertheless be significant. How such machinery may be designed and selected in a relatively cost-effective way must also be on our agenda for understanding. Therefore, the energy in those hydrocarbon bonds needs to be released, converted from chemical into kinetic energy, and made to power a drive train. The logic of understanding “how the system works” as a whole can also be applied to understanding how the machinery within the system works. One looks for the ingenuity underlying its design and operations. In the automobile, for instance, we note that a lot of hydrocarbon bonds can—ingeniously—be packed into a liquid called “gasoline,” which in turn can be packed into a small space known as a gas tank.

As to the potential gains from trade, these need the social and technical infrastructure through which trading occurs: a marketplace. This infrastructure—a location, some security features, administrative personnel—costs relatively little when compared to the utility produced as if out of thin air merely by trading, but the costs are tangible, and identifying the more and less cost-effective solutions is part of what it means to understand how the generic machinery works. The infrastructure of a marketplace is made less costly by taking advantage of the fact that agents seek it out; they do not need to be dragged and coerced. And an especial efficiency is available by simply signaling that some particular unique physical or electronic location is where all the trading is to be aggregated.

Level Three: Evolution over Time

A third level of understanding involves the dynamics of the system, how it evolves over time. By “dynamics” I do not mean only that one event happens after another (or before another) with some regularity; e.g., in one version of legislative “dynamics,” the full legislative house considers a bill only after it is reported by a sub-committee and committee. The dynamics of interest here are those that are generated endogenously and systematically (Forrester 1968; Barlas 2002), albeit sometimes contingently, like the “creative destruction” of capitalism made famous by Schumpeter or the consolidation or fragmentation of emerging coalitions of opponents or allies over the course of a legislative struggle.

To “understand” how such a dynamic system “works” is very complicated, since it involves numerous and complex feedback loops. Both levels of understanding that have been posited to this point are changing, and their changes interact with each other over time. Moreover, level four, discussed in the following, is also part of the feedback process. To deeply understand the overall process requires the right

methodological tools, almost certainly including computational modeling (Bardach 2006). At present, these tools are not well-developed for the study of managerial and administrative processes. We will have to be content with simple metaphors focused on the evolving capacity of the system to do, or to fail to do, productive work.

However, given this rather simple aspiration and the many possible dynamic processes to try to understand, which deserve priority attention? A very general answer is possible: those that have most bearing on the waxing and waning of the reservoirs of potential value identified in the analysis of Levels One and Two. Thus, in analyzing the dynamics of an institutionalized marketplace, we might pay special attention to the growing opportunities for protectionism and fraud, for instance, as suppliers grow more cunning and consumers grow less wary or, as a parallel dynamic, grow in exactly the opposite directions. With respect to the workings of an internal combustion engine, we might wish to focus on how wear and tear degrade its efficiency over time and whether this degradation might have feedback effects by which it might accelerate. In the evolution of political coalitions, we might be especially interested in how incentives for realignments systematically emerge or disappear over time, and perhaps particularly those that are likely to cause resentment and defections.

Level Four: Performance Limits, Tradeoffs, and Vulnerabilities

Finally, a fourth level of understanding comes into view when we recognize that even ingeniously designed and operated machinery is vulnerable to a partially predictable array of failures, performance limitations, and tradeoffs against cost. A full understanding of how the system works cannot be had without describing these as well. For instance, in automobiles, a fuel richer in hydrocarbon bonds is more technically efficient than a poorer one but costs more, and larger gas tanks increase range but add weight and reduce cargo space. When it comes to a marketplace for exchanging stocks and bonds, say, there appears to be a tradeoff between speed and fairness, as well as a systemic vulnerability to large deficits or surpluses of liquidity.

Note that this level of trying to “understand” the system does not make reference to tapping the natural reservoirs of value that we posit for the other levels. That focus is optimistic and positive. Instead, we focus here on the negative, the pessimistic, the harsh realities that sooner or later, one way or another, will impinge on the system. At this level, “understanding” means perceiving the harsh realities and facing up to them.

Here, however, a methodological conundrum enters. One could imagine that almost any “harsh reality” that seems to be a binding limit or fatal vulnerability can be overcome or circumvented by enough creativity and effort. Hence, trying to “understand” such limiting conditions might be meaningless or self-fulfilling.

But then again, might we not wish to point out the constraints or limits that will apply to creativity and effort themselves? If so, then we are back to ending our inquiry on a negative note.

Alas, it is pointless to search for a natural equilibrium. There seems to be no good reason for choosing to end the search for “understanding” on either a positive or negative note. Whatever we decide, it is always possible to take the analysis one step further. But having recognized the stopping point, and the attitude located there, as arbitrary, we might as well make peace with this fact and simply say that we arbitrarily choose to stop when we stop and to forego offering any special justification for doing so.

Understanding How an Implementation Hybrid Works

With this brief tour d’horizon concluded of what it means to “understand how a system works,” we now turn to the particulars of the hybrid policy implementation system, examining it through the four levels described above.

The organizational blob that embodies this potential to be both network and hierarchy sequentially or at the same time deserves a more descriptive name than “hybrid,” and I shall discuss some options below. But it will minimize confusion if, for the moment, we refer to this organizational blob as an “implementation hybrid” or, simply, “hybrid.”

We ought first to reiterate the kind of ICC being examined here. It is one that implements public sector programs delivering human services in a given catchment area or applies regulations to a population of individuals or firms in a given region. This sort of entity differs from many others described in the literature; e.g., those mostly dedicated to sharing ideas and knowledge, or from those identifying and calibrating cross-jurisdictional social problems (Agranoff 2007), or from those sharing ideas about policy or practice (Snyder and Briggs 2004). An implementation hybrid engages in operations and commands resources, the latter not usually its own but somehow contributed by partner agencies.

Level One: Natural Reservoirs of Potential Value

Like any complex productive system, an implementation hybrid takes advantage of many reservoirs of potential value. I shall discuss only two. One is the efficiencies afforded by internal differentiation of its two major internal subsystems—one that manages resource exchange and the other which manages operational coordination—and the matching of hierarchical and network modes to their respective functions.⁴ The second is the way in which each subsystem shares personnel with the other.

Internal differentiation and matching. The ingenuity we see here comes from the fact that the two subsystems function in very different modes, with each mode being matched relatively efficiently to its particular function. Taking a cue from the Incident Command System, we can say that the operational coordination subsystem is relatively hierarchical, whereas the resource exchange subsystem is relatively network-like.

Many, though not all, implementation hybrids involve operations that involve coordinating activities across agency lines, such as organizing personnel, timing, team

leadership, communications protocols, and perhaps certain elements of strategy. The Incident Command System clearly does so. Hierarchy tries to solve the problem of optimizing the coordination of tasks by taking advantage of economies that flow from the rational division of labor and planning. The allocation of resources then follows this rational plan, giving each production unit (or service unit) what it needs to perform its function. Within units, some exchange and sharing is encouraged, e.g., through reallocating tasks, schedules, team composition, and the like. In the absence of such an orderly division, in a world of individuals, the transaction costs of organizing could be very high. Within limits, hierarchy can often reduce these.

To be sure, it can sometimes increase these as well. Hence, even within hierarchies, we find network elements that emerge to reduce transaction costs. For instance, agents can coordinate many operational details in accord with a general knowledge of the collective goal but also with knowledge of their own purposes and local conditions, and without having to follow officially sanctioned communications channels and defer to an organizational agenda. Think of a few dozen social service workers from four or five agencies co-located in a rural site far from their headquarters offices. The agencies and their workers will not behave anarchically but will surely work out orderly patterns that serve the interests of both the client population and the workers and agencies themselves. However, a common pattern is that, while both modes would be present, the hierarchical mode establishes the basic framework and the network is left to fill in the gaps.

Let us now turn to the resource exchange subsystem, beginning with an ICS. During the relatively quiescent moments of its existence, agencies can negotiate their plan for future contingencies and how they will compensate each other when the time comes, either in real money or in favors given and favors owed. These understandings can be ratified either formally or informally. In the aftermath of incidents, they can resolve perceived inequities in light of the past realities and with an eye to future cooperation on contingencies yet to come.

The same sort of processes take place in implementation hybrids that deliver services or adopt and enforce regulations. These negotiate not only real exchanges—agency A sends clients to B for a service, and B gets paid for doing so by agency C—but also sharing and shuffling. Sharing typically involves joint projects with a common goal. Shuffling involves deploying resources in such a way as to help another agency accomplish its mission, even while trying to execute its own mission. Such exchanges make sense because the allocations of resources and responsibilities across agencies reflect their political history and need updating on the basis of current and emerging needs. This updating is usually best accomplished by collaborative processes across the relevant agencies rather than by formal reorganization. Even if some hierarchically privileged vision were able to accomplish an optimal division of labor and allocation of resources at some previous time, non-hierarchical—that is, network-like—processes are best suited to the need for ongoing adjustments. When it comes to helping students struggling in school, for instance, the combination of classroom teacher and school nurse that might have been sufficient in a previous era may now need to include, on an ad hoc “shuffling” basis, an addiction specialist for the father and an employment specialist for the mother.

Two subsystems, one set of personnel. It is so obvious that it seems hardly worth mentioning: as a boon to an implementation hybrid's cost-effectiveness, the resource allocation subsystem and the operational coordination subsystem are both embodied in largely the same set of individuals. These individuals play different roles in these different subsystems, however, and these roles require different attitudes and skills. Individuals must behave differently towards one another, depending on the circumstances and their tasks. There are surely difficulties moving from one set of behaviors to another, but if these can be worked out, the result is a lot more efficient than having different sets of individuals specialized in playing different roles.

Hence, the director of poultry sanitation for county A and her counterpart in county B may be said to "have a professional relationship," but they probably have not one but two (or more?) relationships, one embedded in their resource exchange functions and the other in their operational coordination functions. Similarly, a middle manager in the Fire Department may behave deferentially towards his counterpart in the Police Department in the midst of an operational crisis involving both agencies, but may sustain a peer-to-peer relationship when it subsequently comes to planning for the next occasion for joint operations. A public health nurse might lead an interdisciplinary team of lead-paint inspectors in an operational setting but shift to a peer-to-peer relationship when it comes to deciding on which agency should pick up tenant relocation expenses with representatives of the housing department.

Level Two: The Machinery for Extracting Potential Value

In an ICC, much of the relevant machinery at Level Two involves integration. At the system level, we can arrange it so that the resource exchange subsystem and its plans are complementary with the actions of the operations subsystem. The output of one subsystem is the input of the other. Operational teams will come together as a result of plans, both formal and informal, put together by the interagency understandings that gave rise to the plans. That is one way in which the ICC machinery is set up to extract value from the division of labor in Level One.

Such is the happy view of how integration of the subsystems works out from an Olympian height. Closer to the ground, the picture is not so rosy. Complementarity cannot be assumed but must be worked at. We shall discuss two common ones that work at the task: a jointly created and maintained communications infrastructure and sharing mental models.

Infrastructure. The integration subsystem in an ICC provides a communications and knowledge infrastructure, just as one finds in a conventional network or hierarchy. It facilitates the diffusion of knowledge and information among the various agents in the system. The knowledge concerns the various agents' competencies, capacities, resources, and dispositions to engage in collaborative activities. Information is typically about more instantaneously occurring conditions, like the availability of treatment capacity at some provider agency in the system.

It can take advantage of the communications infrastructures that exist within each participating hierarchical agency and also can link these with a network-compatible

infrastructure that cuts across agencies. In effect, they blend into a single communications infrastructure which sometimes operates according to network norms and sometimes according to hierarchy norms. The differences are subtle and show up not so much in whom people talk to but in how they do it. In a basically hierarchical system, the conversation sounds like this: “Hi there, Scott, Mary here in Public Works. I just wanted to give you a heads-up that we are going to tear up Frontage Street in two weeks as part of our urban renewal work.” The contrasting network mode is: “Hi there, Scott, Mary here in Public Works. We are behind in our urban renewal project schedule, so we would like to begin the Frontage Street work in two weeks. Will this cause you any serious problems?” As we observed earlier, in the discussion of Level One, the people involved in a communications event may be the same but their role orientations differ, depending on whether they are dealing with operations or with resource exchange or with something like tearing up Frontage Street that involves both simultaneously.

An intriguing element of infrastructure is the specialized portion that links administrative functions and personnel across agencies. This can be a support for integration when procedures, rules, and forms mesh reasonably well; e.g., across public sector agencies in the same jurisdiction applying government-wide charge-back norms. But it can be a source of friction when they do not; e.g., travel reimbursement rules for a public agency and for a partner NGO in the private sector.

Shared mental models. The integration function may or may not be housed in a particular substructure, like some interagency committee of middle managers. What counts, though, are the human relationships that permit the sharing of perceptions about purposes, professional expertise, and respective resources. These make all the difference, whether they are embedded in hierarchical or network modes of doing business. Moreover, because these relationships, however good or bad they may be, persist over time at a human level, they are always available as a hybrid’s “capacity,” as the raw material that, depending on the context, may be cast either in the hierarchy or in the network mode. Whatever individual or cadre manages the integration function, it can make use of its network style to coax resources out of potential agency contributors or, if it wishes to call the shots with only modest consultation, back its decisions with hierarchy-like claims to rational planning and expertise. Like Moynihan’s ICS, it can blend its manner and approaches to fit the needs of the moment.

Exactly how those needs are perceived and interpreted depends, in the ICS, on a shared understanding of what is probably a fluid task environment—an escalating or deescalating emergency situation—and the formal and informal protocols for adapting to the situation. For an ICS, overlapping mental models about this point are unusually important, especially if the emergency situation is more ambiguous than, say, a fire or an earthquake or Exotic Newcastle Disease. A fair amount of the technical and political confusion surrounding the governmental response to a possible swine flu epidemic in 1976 was caused by the incomplete sharing of mental models across the many thousands of public health and political officials who were involved in what turned out to be a long process of planning and policy implementation (Neustadt and Fineberg 1978).

Sometimes individuals with different expertise but perhaps in similar roles in their respective agencies come together to integrate their knowledge. Sometimes the integration takes place in the minds of the individuals themselves. And sometimes it is the nature of the joint activity itself that elicits the integration. The last seems to be what happens with regard to the planning function in the generic ICS:

Another important element of the ICS system is a focus on operations, planning, and logistics... Explicitly designed for the incorporation of multiple internal and external resources into a response network, ICS was originally created for forest firefighting where resources often come from distinct locations and there is an important need for coordination. Under ICS, the logistic section brings resources to a staging area. From there the operations section dispatches them, for it commands all the activities on site. The “planning function” is central to ICS. It is the glue that holds the operation together and is a central aspect to the management by objectives approach in ICS. The planning cycle creates specific goals to [attain] during each operational period. In it there is a strategic or campaign plan and a tactical or action plan. In the action plan, objectives are set for each operational period. The entire set of organizations responding to an incident work toward accomplishing those objectives. The operational plan not only sets the objectives, but also identifies who is going to accomplish them (Buck et al. 2006, 1–2).

To parse this further, integration of resources and operations in an ICS comes about because representatives from the various agencies sit down and explicitly plan how to make it happen. In addition, they have the authority to do this; they create a plan that actually makes sense when applied to the real world; they record their plan in a document; and when the time for action arrives, the responsible agencies actually consult and follow the plan.

The ICS experience is instructive for the more conventional ICC. An effective integration subsystem is one that, at the very least, facilitates a meeting of the minds. Furthermore, the minds need to have grappled with the relevant and difficult issues of aligning resources and operations at a sufficiently granular level. Cross-training and team training could be important, depending on what the ICC is expected to do. However, beyond this, extrapolation is not likely.

When minds attempt to meet, it is an experience in juggling hierarchical and network modes of action. Senior managers give their blessings to the implementation hybrid and to certain resource contributions from their own agencies. The more enthusiastic agencies attempt to boost the enthusiasm of their partners. The line-level workers, whose enthusiasm for the joint effort may stem from informal interagency experience and who may have already evolved a spirit of teamwork, must normally do the hard work of aligning personality and professional approaches to their case-by-case joint efforts.

Polymorphous leadership. Like all productive organizations, implementation hybrids benefit from effective leadership. But what “effective” means depends to a

large degree on the nature of the challenges that leadership must meet, such as selecting goals, managing internal conflicts, rallying enthusiasm, and adapting to emerging constraints and opportunities. We need not here cover the entire range. We focus only on a few that arise distinctively in implementation hybrids or require distinctive leadership skills—polymorphous skills—in the hybrid context.

One such skill is for an individual actor to switch hierarchical and network styles as the situation requires. We saw an example in the conversations imagined above between Scott and Mary about repairs on Frontage Street. This is a good analogue to what our exemplary implementation hybrid, the Incident Command System, does when it switches back and forth between equalitarian resource planning and hierarchical operations management.

Another such example involves “follow through.” In their study of local law enforcement hybrids in the UK, Kelman, Hong, and Turbitt (2013) note the importance of “hierarchy light” management measures and try to assess the utility of ten different ones. Not all of these proved effective, and some actually had negative effects if implemented where the agencies themselves had relatively poor managerial records. One that seemed particularly promising, however, was “follow through,” making sure that partner agencies actually delivered on their commitments. Although Kelman, Hong, and Turbitt regard the suite of measures they tested as coming out of a hierarchical tradition of private and public management, many of them could just as easily be associated in principle with network-like or hybrid systems. “Follow through,” for instance, could as readily be done by peers checking up on each other as by hierarchical superiors or by leaders in hybrids.

A second skill of polymorphous leadership pertains to the implementation hybrid as a whole rather than to individuals working within it. More precisely, it involves checks and balances between leaders who represent the styles and interests of the implementation hybrid as a whole rather than those of one or more component organizations. “Leaders” here is in the plural because there is often a need for several, who represent various organizational and philosophical and political points of view. The balance among these, including the governance mechanism that is intended to achieve this, is not self-creating or self-maintaining. Structural features that effect such balancing—and usually perform resource and operational integration functions—are under constant threat. They need protection, as do the people that manage them.

Consider a working group of middle managers from different agencies charged with the task of coordinating operations and, from time to time at least, using resources from different agencies in a flexible and previously unforeseen (and unforeseeable) way. An example would involve a state program to consolidate environmental inspections across, say, four agencies, so that all four visit the same factory on the same day and make sure that the inspections, in their focus on potential hazards and violations, minimize redundancy and maximize complementarity. The operations problem is to synchronize personnel and schedules across the agencies. The corresponding resources problem is to do enough—but not too much, as that would be inefficient—cross-training and team-building so that the inspection agents can operate smoothly when on site and when reviewing the visit *ex post*. This integration

problem would seem to call for a fairly permanent working group made up of middle managers from each of the partner agencies. Their positions in middle management mean that they have an overview of the resources that they can mobilize from their own agencies and the constraints upon them. They have enough authority so as to be able, within limits set by what they believe their hierarchical superiors want or will tolerate, to deploy the resources, but not so much that their working partners can expect too much from them. They use their contacts in their own agencies to know how the work of the implementation hybrid bumps up against these non-hybrid operations. When things don't go well with the implementation hybrid, they know enough about the inside workings of their partner agencies so that they might point a blaming finger, should they deem that appropriate.

However, they are also ideal scapegoats when things go wrong, with blame coming from both above and below them in their agencies. They are also scapegoats when things go right, perhaps suspected of betraying the interests of their home organizations. In a welfare-to-work (JOBS) hybrid I studied in Southern Oregon, one agency staffer on an interagency team of middle managers was tasked with the simple job of designing a reporting format. After being "caught cooperating," as he put it, by his superior, who was also a leader of a "protect the agencies" faction, he sent a memo to his negotiating partners saying, "I am not the JOBS team leader. I had assumed that function on a temporary basis only. [X] . . . is the JOBS team leader" (Bardach 1998, 249, fn. 30).

Evidently, in an implementation hybrid, protection is a job for leadership and is not a simple matter. The limitations of the network subsystem, including its norms of interaction and doing business, must not impede the workings of the hierarchical subsystem. Conversely, networking modes must be protected from hierarchy. Leaders of a certain sort must be protected against leaders of another sort.

In the Oregon JOBS case, it is clear that the middle management group and the hierarchical agency needed protection from each other—though where the need was greater would have been a matter of dispute. In any case, a leader higher in the state governance system than was available at the time would have been useful to sort things out. In the event, an outside mediator was brought in who, within the limitations of the role, could perform certain brokerage functions one might expect from leaders operating out of more conventional roles.

I mentioned above that the solution to this sort of problem lies in the checks and balances of the implementation hybrid as a whole. The "checks" part would no doubt be structural, in the institution and practices of "governance," if such exist and could be maintained in the face of constant challenges. One could doubt that such institutionalized "checks" would actually work very well or last very long, though. They would in effect have matched leader against leader, and any workable equilibrium would probably be temporary at best. "Balancing" seems more promising. In the Oregon case, the best solution would probably have been a leader that could have appreciated the hybrid's need to combine in one role or person the programmatic and protection needs of the middle management working group. This would have been someone who could have himself or herself been one of the superiors, but who would have been willing and able to combine styles of leadership, rather than to have promoted one permanently at the expense of the other.

I conclude this section on polymorphous leadership by describing a leadership task important to hybrids that may or may not be documented empirically: it depends partly on how one interprets some of the cases in Agranoff (2007) and also, undoubtedly, on other sources of which I am unaware. As a theoretical matter, however, an implementation hybrid would be well served by working within a culture of organizational pragmatism and personal flexibility. The “reinventing government” spirit is as applicable here as it is for more traditional government organizations. Although pragmatism is more commonly found in the environment of an implementation hybrid than in more rule-bound traditional agencies, the larger governmental environment may not encourage it, and faithful adherence by either agencies or individuals often requires an intellectual and moral effort. At the individual level, interpersonal relations in a hybrid require psychological flexibility. Sometimes one is working with individuals from other agencies in an egalitarian, voluntarist, network mode, and sometimes they are highly aware of various deference-sensitive aspects to their relationships.

This sort of fluid and heterogeneous task environment clearly calls for various and more than occasional interventions by individuals who perform leadership functions, whatever their formal roles happen to be. Just how they are to perform these well is not obvious either practically or academically. More research is surely called for. But for the moment, the skill of polymorphous leadership referred to above as “balancing” is probably indicated.

Level Three: Evolution over Time

Whatever the process whereby an implementation hybrid evolves, it does just that: evolve. Over the course of its activities, any such hybrid undergoes many changes. Some of these are stimulated from without, such as by electoral shifts or fiscal crises (Rethemeyer and Park 2014; Bardach 1998). Others arise endogenously, from evolutionary dynamics largely shaped by the nature of the internal environment. An example is the development of shared mental models and interpersonal trust that occurs over time, in many cases followed by the disintegration of these very assets with the possible turnover of key personnel. Some, like the Lockean moment when an ICS morphs from its network form to its hierarchical form, result from an interaction of the two. Owing principally to space constraints, we address only three of these dynamics: bandwagon processes, maturation, and emergence.

Bandwagon processes. A wag once defined interagency collaboration as an unnatural act among non-consenting adults. But, over time, it is possible that what was once unnatural comes to seem more natural. Competence breeds competence, confidence builds confidence, and capacity augments capacity. And small wins increase all of these and therefore lead to larger and more wins (Weick 1984). Success is rewarded by more success. The feedback effects, which take place over time, can be substantial (Bardach 1998; Ansell and Gash 2007). They work mainly to strengthen the Level-Two integration sub-system.

Increased legitimacy is one such beneficiary. “Legitimacy” is appropriately a broad and somewhat diffuse term, involving attitudes that are both external to the implementation hybrid (e.g., those of legislative and party leaders) and internal to the parties within the hybrid. It includes a belief in the value of the hybrid’s public policy goals and its efficacy in achieving them. Obviously, it is impossible to say, in general or in particular, how much legitimacy is enough for an implementation hybrid to operate effectively. But just as obviously, there is inevitably some required quantity (Provan and Kenis 2008).

Maturation. An implementation hybrid starts life being fragile and vulnerable. Over time, bandwagon-like feedback processes may strengthen their constitution, as suggested in the previous section. Some of these occur as predictable series of environmental events occur and interact with the natural endowments of the system, analogous to an individual growing taller with the passage of years when combined with acquiring the appropriate exercise and nutrition. Of course, as with individuals, the maturation of an implementation hybrid brings exposure to risks and processes of deterioration.

One expects that, in most cases, an implementation hybrid grows over time, at least slightly. In the more “organic” variants of such growth, mental models become more shared as agencies slowly discover their concern with the same problem (such as an overlapping set of a few dozen high-risk families the agencies all serve) and begin to coordinate their activities and their policies around the problem. The growth may be from, say, two to five public agencies and much greater if NGOs and community-based organizations were to join in. In the less organic but more purpose-built variants of an implementation hybrid, such as a regional economic development hybrid or watershed protection hybrid or others like those studied by Agranoff (2007), we could expect up to 30 or 40 organizations if for-profit entities were to be included.

Provan and Kenis (2008) argue that increases in size make consensus more difficult. That is certainly true if achieving complete consensus is the norm. However, it is possible that greater size could have the effect of diluting oppositionist minority interests and would therefore make stalemate less likely. Consensus might also become easier to reach over time, as there is cumulation of learning about each other’s needs, desires, and capacities. In addition, the agencies have the experience of searching out the overlap among participants’ goals and objectives that makes joint action feasible. It is also possible that, over time, agencies with permanently losing agendas tend to drop out of the implementation hybrid altogether, or relegate themselves to a marginal and passive role, so that sufficient consensus becomes easier to achieve among the remainder. Of course, this may or may not increase the wisdom and the efficacy of the hybrid’s decisions and actions.

Increases in size—that is, inclusion—might also lead to increases in inclusiveness. But they might not. Inclusion and inclusiveness are not the same thing. Newly included participants might wittingly or unwittingly, through behavior regarded by others as uncooperative or unreliable or inappropriate, undermine whatever sense of inclusiveness exists. Or their presence might alienate participants of longer standing and, previously, greater commitment.

The conventional wisdom is that trust among the agencies, or at least their representatives who work together, accumulates over time (Lundin 2007; Isett et al. 2011). Trustworthiness and trust are instrumental towards increased hybrid effectiveness, as they support expectations of eventual reciprocity that are so important to reducing transaction costs in network-based relations. Assuming that agencies are in fact trustworthy, and over a series of joint activities have opportunities to furnish evidence of this to one another, conventional wisdom is almost surely right. But what effect has untrustworthy behavior on this dynamic? So far as I am aware, no research exists on how this is dealt with by the agencies that—justly—feel wronged, say, by the rest of the parties. Do they accord second chances? And if so, contingent on what sorts of penance and/or promises?

A further question exists as to what effect leadership has on the evolution of trust. Provan and Kenis (2008) hypothesize that vesting leadership functions (“governance,” in their terms) in the hands of a single agency is one response to diminished trust. In some situations that may be so. But one effect of diminished trust may be that the agency singled out for leadership may be just as much distrusted as the others, if not more so.

How it works out may depend on the managerial craftsmanship of the existing cadre of participants, particularly the leadership. One study found that a slow and deliberate process of bringing new participants on board is more effective in the long run than a more rapid process (Johnston et al. 2011). Socialization and the development of shared mental models takes time and care.

Emergence. A feature of a system is “emergent” when its qualitative existence results from endogenous processes within the system itself; e.g., when an arms race eventuates in war. In a polymorphous implementation hybrid, like an Incident Command System, an initial flexibility might, over the years, ossify into a rigid hierarchy. This and other such emergent processes are complex and beyond the scope of discussion here. A somewhat simpler example can be offered, however: leadership.

Leadership might be an emergent feature, as relatively leaderless agency clusters discover that leadership would be useful to achieve some collective goal and, at the same time, that some one of their number might be a good choice for the role. An alternative path toward an emergent leadership would be a sequence of clever strategic and tactical moves by individuals or agencies simply seeking power.

We discuss below, however, the question of whether it is “polymorphous” leadership, especially suited to implementation hybrids, that emerges or some other kind.

Level Four: Performance Limits and Vulnerabilities

The sources for these limits and vulnerabilities are both endogenous and exogenous.

Endogenously, we may note that developing the needed trust and the overlapping mental models to make an implementation hybrid work reasonably well takes a lot of time. I mean the time that individuals have to allocate from their already-busy workdays and also the calendar time that allows for events and their impacts to cumulate “naturally” and in such a way that environmental opportunities and constraints emerge and become more clear.

Individual time pressures are an important limiting factor, probably more so than is usually recognized. “Suggest the primary practical lesson I should tell readers about interagency collaboration,” I asked one informant when doing field work for *Getting Agencies to Work Together*, and the answer was, “Tell them it eats up an awful lot of time.” She then proceeded to give me an accounting of hours spent relationship-building, assessing capacity and trustworthiness, and working out operational details.

Another endogenous limit on the effective functioning of an implementation hybrid has to do with leadership. We noted above that leadership typically emerges in an implementation hybrid because it proves useful for many purposes. This is a proposition about leadership in general, not about the polymorphous leadership that would arguably be particularly suitable for an implementation hybrid. Though leaders might arise, will they have the right mix of skills and sensibilities for the tasks at hand? More to the point, assuming that the relevant leadership skills, like the leadership role itself, are emergent, will the processes that produce them nurture or block their creation? Or perhaps even destroy such as might be present at the beginning?

One answer is this: suppose that the relevant processes are evolutionary—dominated, that is, by mechanisms of variation, selection, and retention—if successful performance by the implementation hybrid is part of a selection mechanism, then the needed leadership skills should emerge. But other selection mechanisms are at work both for which persons become leaders and for which skills these persons retain, and these are probably not favorable to the subtle blend of skills useful for polymorphous leadership. Selection pressures exist, mainly political, within the hybrid to favor either a hierarchical style at the expense of the network style or vice versa. One gets either a “facilitative” leader who works well in the network mode, or else an “advocacy” leader suited to the hierarchical mode (Bardach 1998), but not the optimal blend of the two. Of course, falling short of optimality does not necessarily entail failure. It merely means that performance of the hybrid will not be optimal.

Exogenous limits on hybrid performance are probably more constraining than endogenous limits. Partners in the hybrid are mostly public agencies which, however excellent they may be within typical governmental constraints, do eventually run into them.⁵ I have in mind such matters as single-mission agency mandates, categorical grants, “overhead” rules that govern procurement and budgeting and the like, political pressures, due process, and administrative law. Kelman, Hong, and Turbitt (2013) emphasize this in their conclusions about criminal justice collaboration in the United Kingdom: “. . . managing a collaboration often works better where single agencies work better, so if you want collaborations among agencies to succeed, you need to worry about the health of individual agencies” (*italics in original*). The logic of an implementation hybrid, of course, is to offset agency shortcomings to some degree by extracting value from complementarities of various kinds from among the partners. But these go only so far.

Related to these institutional constraints are governmental budget constraints. Given their missions, agencies are often short on staff and under-funded.⁶ Agency managers must often choose between allocating resources to traditional program elements and to the implementation hybrids in which their agencies participate. From a

public-interest point of view, the tradeoff favors, and should favor, the traditional. In addition, the politics of intra-agency resource allocation usually also favors the traditional.

A second exogenous limit worth mentioning is the destruction of trust and of shared mental models owing to personnel turnover. Individuals switch jobs, jobs switch individuals, and jobs appear and disappear. Relationships, both personal and among roles, will often not survive the changes, and hybrid functioning will in turn not often survive the disintegration of relationships.

Finally, we may mention the normal policy churning to which government is vulnerable: sudden fiscal weakening; partisan shifting of priorities; electoral successions in which the newcomers destroy the work of their predecessors simply because it is not their own. Public execution might be the main instrument of destruction, but probably more often it is simply indifference and neglect.

Semantics Revisited

What have been called “networks” are often hybrid systems with “hierarchies” playing an important role in their functioning. This is a statement about phenomena. We turn now from the phenomena themselves to the matter of how we talk and write and think about these phenomena.

At the start of this article, I argued that calling these hybrids “networks” was, to a large degree, a category error that was very likely distorting our analytic understanding of the way these systems functioning. I have tried to justify this claim not by pointing out distortions that appear in the literature—it would be impossible to do so in most cases, given that I do not know the realities on their representations have been based—but by advancing my own understanding of how hybrids work. Given such an approach, a fair question is whether one could not accomplish substantially the same goal simply by modifying the conventional semantic framework of “network with a hierarchical element.”

One cannot answer this question definitively, since the value of any semantic representation can be tested only by how well it supports subsequent understanding, a somewhat subjective and drawn-out test. However, one may observe that it is also possible, for certain limited purposes, to discuss octagons as though they were circles. But when those limited purposes have been exhausted, the exercise becomes either misleading or excessively cumbersome.

Therefore, if “network” will not do, what will? I have been using the term “implementation hybrid” to refer to certain types of collective production system. As I said earlier, this was only a provisional choice, primarily to get us through the discussion in this article. These terms are obviously awkward, superficial, and cumbersome. Yet it is misleading to refer to these phenomena merely as “networks,” as is conventionally done.

As a case in point, let us go back to the Moynihan article. How did a leading public management scholar like Moynihan overlook this very striking capacity of a system to morph according to situational requirements? One reason is probably that the multilateral and voluntary features of the agents’ relationships were the

signature elements of the system, and these called out “network.” Without a label for the generic hybrid that Moynihan in fact observed, he settled upon the academic idea in good currency, and of much intrinsic fascination, “network.” And, if we are to believe even a little in Whorfian linguistics, the labeling guided his perceptions towards one set of dimensions in the phenomenon (multilateralism, voluntarism) and away from another (morphing).

A more subtle problem resides in the term “governance” imported by Provan and Kenis (2008) into the network concept. Apart from the simple empirical warrant for doing so, their conceptual rationale seems to be that a hierarchical element often simply makes a network work by extending the powers of network processes that are already there, like reaching consensus on goals or resolving tensions among the parties with regard to resource burdens. They are no doubt right. However, this view of the matter does not sufficiently recognize that the hierarchical element probably works as much to subvert and to neutralize network-like processes—that is, its pathologies—as it does to extend and perfect them. The hierarchical element imposes order and resolution on only partially willing and cooperative parties. The public interest may be served, as well as the narrower interests of the majority of the parties, but there are also genuinely dissatisfied losers. But for the exercise of hierarchical domination, the voluntarist, egalitarian, and consensus-seeking “network” might not have moved off center.

Is a new term—a “neologism,” to put the harshest light upon it—needed? It is hard to say. The term “collaborative” has often been used, but this term prejudices observations in favor of finding cooperation and harmony but little or no conflict. “System” might work if qualified by adjective phrases like “primarily network-like” or something even fuller like “a system of collective production with primarily network-like [or hierarchical, or market-based] relationships.” Another possible choice is Agranoff’s “collaborarchy” (2007, 83), which he uses to describe the 14 entities within his *Managing Within Networks* book, although it would be desirable to enrich the conception behind it to cover the sorts of implementing hybrids discussed in this article. Kelman, Hong, and Turbitt (2013) speak of “hierarchy light” when they speak of the successful criminal justice collaboratives they studied in the UK.

In a previous work (Bardach 1998), I have used “interorganizational collaborative capacity,” or ICC, partly in order to suggest a sort of confederation arrangement both of implementation and of decision making and also in order to avoid the connotations of “network” and “hierarchy.” It also leaves open the question of exactly the forms in which this ICC gets expressed—something vaguely hierarchical but not completely so and all depending on factors not completely specified. But this term lacks felicity and has not found favor in the research community. In any case, I leave the semantic problem for others to deal with.

SUMMARY AND AGENDA FOR FURTHER RESEARCH

The networks literature in public management refers, both conceptually and empirically, to systems of collective production that are actually hybrids of networks

and hierarchies but mislabels them as “networks.” An example would be, say, 25 mental health providers serving the population of a metropolitan area, or a set of five environmental regulatory agencies implementing enforcement programs in a regional watershed or airshed. This mislabeling amounts to what philosophers call a “category error,” which in this case leads us to overlook or misunderstand important aspects of how these hybrids actually work, especially the contributions made by the hierarchical element.

Empirically, I start with an example from a study by Moynihan describing the workings of an Incident Command System (ICS) operating in a veterinary emergency in Southern California in 2002–03. Although the ICS is, in important respects, not typical of more conventional implementation hybrids, it has the advantage of showcasing fairly clearly defined functional subsystems—resource exchange and operational coordination—that go to compose the overall system. The ICS is a good place to begin to explore more conventional but fuzzier systems.

My proposed understanding of how a hybrid implementation system works begins with positing a framework for “understanding” in general as this term applies to artificial (humanly engineered) systems as opposed to those found mostly in nature. Basically, this entails pointing to the ways in which the system manages “ingeniously” to be both effective and cost-effective but, as an indirect result of this ingenuity, runs up against performance limits and vulnerabilities. I use as examples primarily an automobile and a marketplace. I then apply the framework to a particular type of production system, the implementation hybrid.

The ingenuity of an implementation hybrid begins with ways of taking advantage of sources of productive power at relatively low cost. For instance, it takes advantage of the division of labor into two subsystems, one for resource exchange and another for coordination of action. Further, it enjoys transactional efficiencies when it manages resource exchange by acting mostly in the network mode, but gains efficiency in managing coordination functions by acting in the hierarchy mode. It realizes still another efficiency by utilizing largely the same personnel to man both subsystems but relying on these personnel playing different roles with one another, depending on which function they are performing.

A subsystem that integrates resources and operations is also necessary. It draws together, and makes use of, the communications infrastructure that connect actors in the network and the counterpart that connects actors in the hierarchy. Another piece of the integration system is the network of human relations that grows up to allow actors to develop shared mental models of what they are doing collectively and separately. The integration subsystem is often faced with difficult decisions, and it is laced with tension among the participants. But this tension is functional. Among other virtues, it allows hierarchical elements to push back against some of the pathologies of the network form as well as network elements to offset the pathologies of hierarchy. It also presents opportunities for “polymorphous leadership,” the sort that takes advantage of the political norms and technical needs for blending, or “balancing,” both network and hierarchical styles of leadership.

An implementation hybrid evolves over time in partially predictable ways; hence, a brief dynamic analysis is also provided. It focuses on three processes (bandwagon, maturation, and emergence) that either increase or decrease capacities of the system to function more effectively.

A satisfactory understanding of an implementation hybrid, like that of any production system, also covers its limits and vulnerabilities. I describe four categories: the numerous legal and political and organizational encumbrances on governmental agencies; the economic and partisan disruptions associated with economic and election cycles; the disruption in relationships that is caused by personnel turnover; and the political difficulties in establishing leadership styles that embrace the conventional as well as the polymorphous.

What might this understanding of implementation hybrids, provisional and superficial though it surely is, imply for future research? I would propose starting with Level Four issues, having to do with limits and vulnerabilities. As noted above, this category of issues is open-ended, allowing us to stop filling it out when it pleases us to stop, rather than piling potential remedy upon potential limit, which remedy has its own limits, and which limits have their own potential remedies, *ad infinitum*. We have in this paper stopped with potential limits. The next research step is obviously, therefore, to explore how these and other such limits can be transcended. This would have both theoretical and practical significance.

For instance, the limits imposed by predictable economic and political disruptions might be partially circumvented by institutionalizing the gains made by implementation hybrids at relatively short intervals. “Salami slicing” is a common term. If a public health-oriented hybrid is dealing with residential lead paint hazards in low-income housing areas, the hybrid can address one neighborhood at a time in enough depth to proceed to institutionalize its neighborhood-focused practices. The rest of the at-risk neighborhoods can be ignored while this one is done. But do local public health and housing agencies actually do this? How do they do so? What political and other barriers are encountered along the way? And how are they surmounted?

Or consider the limits posed by the many hours that are often required in meetings and retreats and informal lunches to allow individuals to build trust and align mental models. How do implementation hybrids deal with this problem? Do they even recognize it as such? Indeed, just how big a problem is it? And do senior managers recognize the trade-off between time spent on forwarding an implementation hybrid in which their agencies participate and attending to issues within the agency’s own bailiwick? What role does leadership in the hybrid play in helping to devise solutions to this problem?

Finally, we might remember that not all “networks” are mislabeled as such. The arguments in this paper focus on a particular kind of network discussed in the literature, the implementation hybrid, which makes use of multiple autonomous agencies to implement public programs that routinely deliver human services or regulate business enterprises. They probably do not apply to networks that mainly attend to problem-solving, policy-making, or knowledge management. This is a matter for further inquiry, however.

NOTES

1. The subjectivity in such an approach is readily admitted. That is not a great defect, however, if perceptions of ingenuity are broadly shared. It has the great virtue, moreover, of acknowledging that the study of managerial and administrative processes might, for some purposes, make use of something other than a positivist metaphysics and methodology.
2. <http://publichealth.lacounty.gov/vet/newcastle.htm>
3. For a longer discussion and more examples, see (Bardach 2004; 2012).
4. The Provan and Kenis conception of a “network” likewise seems to assume a system primarily driven by exchange and coordination functions, just as I have postulated (2008, 231). My integration function is subsumed in their “governance” function, although, as I indicate in the following, I would add conflict management to integration to constitute a “leadership” function.
5. In an earlier work, I argued that government agencies that had had more experience, and sympathy, with the “reinvention” agenda of a greater results orientation, more flexibility, and less hierarchy were doing better with interagency collaborative work than those that had not (Bardach 1998, 307).
6. They are often plagued with a variety of inefficiencies as well. But leaving these aside for the moment, under-funding is still prevalent.

REFERENCES

- Agranoff, R. 2007. *Managing Within Networks: Adding Value to Public Organizations*. Washington, DC: Georgetown University Press.
- Ansell, C. and A. Gash. 2007. “Collaborative Governance in Theory and Practice.” *Journal of Public Administration Research and Theory* 18: 543–571.
- Bardach, E. 1998. *Getting Agencies to Work Together: The Practice and Theory of Managerial Craftsmanship*. Washington, DC: Brookings Institution.
- Bardach, E. 2004. “The Extrapolation Problem: How Can We Learn from the Experience of Others?” *Journal of Policy Analysis and Management*. 23(2): 205–220.
- Bardach, E. 2006. “Policy Dynamics.” Pp. 336–366 in M. Moran, M. Rein, and R. E. Goodin, eds., *The Oxford Handbook of Public Policy*. Oxford, UK: Oxford University Press.
- Bardach, E. 2012. *A Practical Guide for Policy Analysis: The Eightfold Path to More Effective Problem Solving*. Washington, DC: CQ Press.
- Barlas, Y. 2002. “System Dynamics: Systemic Feedback Modeling for Policy Analysis.” *Knowledge for Sustainable Development: An Insight in the Encyclopedia of Life Support Systems*. UNESCO, Paris, Eolss. I: 1131–1175.
- Barnard, C. I. 1938. *The Functions of the Executive*. Cambridge, MA: Harvard University Press.
- Berry, F., R. S. Brower, S. O. Choi, W. X. Goa, H. Jang, M. Kwon, and J. Word. 2004. “Three Traditions of Network Research: What the Public Management Research Agenda Can Learn from Other Research Communities.” *Public Administration Review* 64(5): 539–552.
- Bertelli, A. M. and C. R. Smith. 2009. “Relational Contracting and Network Management.” *Journal of Public Administration Research and Theory* 20: i21–i40.
- Buck, D. A., J. E. Trainor, and B. E. Aguirre. 2006. “A Critical Evaluation of the Incident Command System and NIMS.” *Journal of Homeland Security and Emergency Management* 3(3): 1–27.
- Chrislip, D. D. and C. E. Larson. 1994. *Collaborative Leadership: How Citizens and Civic Leaders Can Make a Difference*. San Francisco: Jossey Bass.

- Forrester, J. W. 1968. *Principles of Systems*. Cambridge, MA: Wright-Allen Press.
- Goldsmith, S. and W. D. Eggers. 2004. *Governing by Network: The New Shape of the Public Sector*. Washington, DC: Brookings Institution Press.
- Herranz, J., Jr. 2008. "The Multisectoral Trilemma of Network Management." *Journal of Public Administration Research and Theory* 18: 1–31.
- Isett, K. R., I. A. Mergel, K. LeRoux, P. A. Mischen, and R. K. Rethemeyer. 2011. "Networks in Public Administration Scholarship: Understanding Where We Are and Where We Need to Go." *Journal of Public Administration Research and Theory* 21(i): 157–173.
- Johnston, E. W., D. Hicks, N. Nan, and J. C. Auer. 2011. "Managing the Inclusion Process in Collaborative Governance." *Journal of Public Administration Research and Theory* 21: 699–721.
- Kamensky, J. M. and T. J. Burlin, eds. 2004. *Collaboration Using Networks and Partnerships*. Lanham, MD: Rowman and Littlefield.
- Kelman, S., S. Hong, and I. Turbitt. 2013. "Are There Managerial Practices Associated with the Outcomes of an Interagency Service Delivery Collaboration? Evidence from British Crime and Disorder Reduction Partnerships." *Journal of Public Administration Research and Theory* 23: 609–630.
- Lundin, M. 2007. "Explaining Cooperation: How Resource Interdependence, Goal Congruence, and Trust Affect Joint Actions in Policy Implementation." *Journal of Public Administration Research and Theory* 17: 651–672.
- McGuire, M. 2003. *Is it Really so Strange? A Critical Look at the "Network Management is Different from Hierarchical Management" Perspective*. Washington, DC: Public Management Research Association.
- Moynihan, D. P. 2008. "Learning under Uncertainty: Networks in Crisis Management." *Public Administration Review* 68(2): 350–361.
- Neustadt, R. E. and H. Fineberg. 1978. *The Swine Flu Affair: Decision-Making on a Slippery Slope*. Washington, DC: Government Printing Office.
- Osborne, D. and T. Gaebler. 1992. *Reinventing Government*. Reading, MA: Addison-Wesley.
- Powell, W. W. 1990. "Neither Market nor Hierarchy: Network Forms of Organization." *Research in Organizational Behavior* 12: 295–336.
- Provan, K. G. and P. Kenis. 2008. "Modes of Network Governance: Structure, Management, and Effectiveness." *Journal of Public Administration Research and Theory* 18: 229–252.
- Provan, K. G. and H. B. Milward. 1995. "A Preliminary Theory of Interorganizational Network Effectiveness: A Comparative Study of Four Community Mental Health Systems." *Administrative Science Quarterly* 40: 1–33.
- Rethemeyer, K. R. and H. H. Park. 2014. "The Politics of Connections: Assessing the Determinants of Social Structure in Policy Networks." *Journal of Public Administration Research and Theory* 24(2): 349–379.
- Saint-Onge, H. and C. Armstrong. 2004. *The Conductive Organization*. Burlington, MA: Elsevier.
- Snyder, W. M. and X. D. S. Briggs. 2004. "Communities of Practice: A New Tool for Government Managers." Pp. 171–272 in J. M. Kamensky and T. J. Burlin, eds., *Collaboration Using Networks and Partnerships*. Lanham, MD: Rowman and Littlefield.
- Weick, K. E. 1984. "Small Wins: Redefining the Scale of Social Problems." *American Psychologist* 39(1): 40–49.

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