

Routines and the Rhetorical Microfoundations of Organization.

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Organizational routine (OR) is an idea with a history. Many attribute the term to Stene (Simon, 1997:187n2). But behind the term itself lies the recognition that organizations persist only because, somewhere within them, there are people who know what needs to be done (Dosi, Nelson, & Winter, 2000; Spender, 1989:2). While this takes us back to Adam Smith and his labor-abridging pin worker, today we are mostly children of Simon. His approach to administration pushed knowledge rather than power into the foreground and the traditional factors of production - including labor and even motivation - into the background. Unfortunately knowledge turns out to be an exceedingly slippery subject. No question, our sense of moving into a new knowledge or information era has spurred a torrent of academic, consulting and commercial interest in organizational knowledge (Drucker, 1992). It has even produced a new academic discipline, knowledge management (Prusak, 2001). Yet much of the potential seems drowned in a cacophony of new terms and strident claims. Cries of faddism are frequent, yet many of those who write about ORs seem unaware of the work, hopes and disappointments around them. Looking at the OR literature it seems the basic challenge is to escape the inherent tautologies which threaten it. For instance: ORs are stable, therefore explain organizational persistence. But how do ORs get created? As sedimentations of successful practice. QED.

There are two ways to step outside these tautologies. This gets us into a discussion of social science methodology that does not really belong in the present paper. So I extemporize and argue we might verify ORs through empirical research. (Narduzzo & Warglien, 2008) show us the possibilities here without raising critical questions about what, precisely, is being verified - for a critical assessment of the work to date might leave few ORs standing. A second strategy is to find non-tautological support or definitions for the OR literatures' defining terms. So I take ideas circulating in other fields and bring them to bear on the OR discourse in the hope of opening up some less tautological analysis. This is the impulse behind recent appeals to (a) neurobiology and (b) agent-based modeling - two disciplines I shall ignore. Instead, I draw on

knowledge management and rhetoric.

First, I consider whether the OR discourse is coherent, standing on a consistent set of axioms. Secondly, concluding it does not - no surprises here - I draw a distinction between that part of the OR discourse that engages Knightian uncertainty and bounded rationality, and that which does not - the bulk. This is a reflection of both our dominant research tradition and, ironically, the huge impact of Nelson & Winter's contribution. Third, and this is the core of my piece, I argue that while most writers focus on ORs as 'what the organization knows', they might pay more attention to how to proceed when the organization does not know, when it experiences a 'knowledge absence'. This is the practitioner's normal state, a confrontation with Knightian uncertainty.

I argue we humans respond with our agency - more or less defined as bringing our imagination to bear in the world in order to change it. But, to use Penrosian terminology, when the management team's own agentic resources are insufficient to resolve the knowledge absence, it must appeal to others such as employees, lead users, etc. This dilutes, even denies, their control. Unfortunately principal-agent theory has muddied the water here since it spins on the agent's rational responses to the principal's instructions, structures and incentives - so failing under the very conditions of Knightian uncertainty that encourage the agent to be agentic. So fourth, in its lieu, I advance rhetoric as the means by which managers shape the agentic activity of others. Fifth, and in conclusion, I suggest that the discovery and application of rhetorical components and practices opens up a more fundamental non-tatuological view of organizational routines. Ironically, far from being problematic to research empirically, such routines hide in plain sight, ready to be appropriated by researchers such as Patriotta or Narduzzo et al.

Why Organizational Routines?

Nelson & Winter's intent as they successfully propelled the term 'organizational routine' into our discourse was to meet the economic discipline's urgent need for a theory of technologically-driven growth. Sympathetic commentators say their 1982 book is the 'most penetrating and sustained attack yet on the neoclassical model'. But looking at how the

discussion has evolved we sense a broadening agenda but, equally, a loss of coherence. First, organizational theorists, whose agenda that differs from economists', have gotten into the act, attaching terms like capability and competence. Second, we see little attention to managements' needs - an explanation of how moving on from the conventions of rational decision-making to considering routines, competencies or capabilities might provide them fresh insights into their everyday practice. While Nelson & Winter focused on an evolutionary variation-selection-retention system that created routines and brought them into the organization, routines are now expected to address many other questions, explaining, for instance, the firm's substance, much as 'resources' do for the RBV theorists. And like the RBV discussion, wherein 'resources' seems to have acquired every property theoretically demanded, organizational routines seem to have acquired a similar plurality of properties and characteristics. They can be behavioral, cognitive or artifactual, sources of both change and stability, observed at both individual and collective levels, be instruments of both structure and agency, be both emergent and embedded, both enacted and slack, vehicles for moving and memorizing capabilities as well as for their creation, and so on. Routines are close to being the answer to every organizational puzzle. Yet, as Dosi, Nelson & Winter 2000, Narduzzo, Rocco & Warglien 2000 and (Becker, 2008b) concede, organizational routines remain ambiguous and ambivalent, defying strict definition. In short, as (Reynaud, 2005) tells us, we are in a muddle, and I agree.

Rather than complain about this state of affairs or be provoked into policing our theorizing along the Pfeffer-friendly lines suggested by Becker et al (2005) or (Gavetti, Levinthal, & Ocasio, 2007), or demanding a hiatus until the OR concept can be supported by empirical data, it might be more revealing to wonder why it has such broad appeal, to try and identify the research anxieties it salves. Just where do organizational routines fit into our agenda? The most widely accepted view is that they help us explain organizational continuity, the persistence of patterns of economic activity through time. Markets, in contrast, are less stable, their very instability being an indication they are working - a difference between the production of value and its reallocation. Time is a puzzle for us and we may forget that neither the mainstream theory of the firm nor the theory of organization has much place for it. In part this is because time is irrelevant in a fully-determined system. Only the equilibrium condition is of theoretical import. Eventually I shall suggest routines presuppose uncertainty and are thus not

part of equilibrium thought. Without getting into the philosophical challenges (Critchley & Schurmann, 2008; Heidegger, 2008), we know time is central to analyzing practice under uncertainty, when what happens in the future turns out to differ from what was forecast in the past, yet acted on anyway. Likewise, evolutionary growth, change or decay are meaningless without time. Evolutionary thought itself is about adaptation in an incompletely known changing environment, wherein change itself presupposes a lack of knowledge. Evolution also requires a part-whole distinction that allows radical changes in the parts to produce gradual change in the whole.

Along such lines I surmise Nelson & Winter were attracted to an evolutionary approach because they sought to embrace Knightian uncertainty, bounded rationality, part-whole distinctions, knowledge-making, friction, loss, discovery, learning, path dependency and so forth in a time-dimensioned behavioral theory that would illuminate economic growth better than the abstractions of conventional micro-economics (R. R. Nelson & Winter, 1982:Chapter 2; 2002). A side matter, noted in (Foss, 2003:187n2), is Winter's statement that they sought no theory of the firm. I feel it is difficult to understand their project in any other way, even if we allow they were investigating generic 'high level' economic conceptualizations rather than firms *per se*. Even in the later work on 'national innovation systems' the engine of production, profit and growth remains the firm (R. R. Nelson, 1993). While many regard the routine as the fundamental unit of analysis, I think this incorrect so long as the routine actually draws its meaning from the organization of which it is part.

But if part-whole mechanisms of continuity and growth are to be our target, organizations already have many analyzable time related concepts - capital, resources, structure, rules, identity, goals, strategy, institutionalization, environmental change, and so forth. All can be changing or unchanging through time, all can be carried from one time period to another. All can shape behavior, which is always in the instant. All can provide explanations for behavior. How come they are insufficient to the analysis, creating a need for additional concepts? Conversely, how can we show organizational routines differ from these more familiar concepts? Can they help us overcome the conceptual chasm between the organization, as an apparatus for shaping behavior, and the individual's value absorbing and creating practices that bring it to life?

Nelson & Winter's basic agenda is well known. Given our personal limitations and tendency to incompetence, how come our societies and economies advance, seemingly outpacing their comprising individuals' limitations? Their answer is that firms are collectives that act as repositories or memories of nuggets of successful behavioral knowledge that can be carried forward through time, maybe by those who skills contributed the knowledge, maybe to others who access them. Thus the useful knowledge is passed from hand to hand. At the same time (a) the knowledge generation is driven by both inter-firm competition and environmental change, and (b) evolutionary forces select the knowledge that gets stored. Competition improves the body of knowledge (ORs) by eliminating the less successful.

The model embraces axioms covering:

- the bounded-ness of human rationality, else collectives would not be needed,
- heterogeneous sub-unit (individual or work group) experimentation as the practical context of the variation and routine development process,
- a firm-level mechanism (memory) to store and carry forward what has been learned,
- mechanisms to integrate the routines into the organization's value-creation processes,
- mechanisms to select or otherwise shape the knowledge-base towards the organization's goals.

The result is profit-induced organizational growth within regimes of limited path-dependency, otherwise the knowledge carried forward would be without value. I shall argue that organizational routines are not explicit like a computer's program. They are a necessary aspect of the memory mechanism for while the organization may well establish rules, N& W assumed the bulk of its knowledge would be tacit, embedded in the organization's skills and practices into which new individuals must be socialized. While rules can be fully specified, by definition, tacit knowledge cannot. Thus N&W saw the firm as a body of memorized, institutionalized, taken-for-granted behaviors whose ultimate gene-like unit is the organizational routine. But since these are produced and processed by individuals the theory also hangs on assumptions about such individuals' discovery, learning and knowledge application processes. These assumptions lead, crucially, to an ontology that presumes the organization is separable from the individuals who make it up. While crucial this assumption is not radical, far from it.

But it matters hugely to how we might understand ORs.

These assumptions create openings for critical evaluation and alternative formulations. My overall view is that N&W's assumptions are richly provocative but ultimately untenable, and that the apparatus of organizational routines needs to be substantially reconstructed if it is to illuminate the microfoundations sought. By way of supporting this I shall reprise Penrose's famous 1952 criticism of evolutionary models (Penrose, 1952), itself a throw-back to the squabble between William James and Herbert Spencer that began in 1878 (Hofstadter, 1955:131). While Spencer regarded evolutionary forces as irresistible and so determining, James would have none of it. He called instead for some indeterminacy, opening up a space for our human agency, for considering how we rather than Natural forces produce a world that would not have otherwise happened, agency being fundamental to his humanist pragmatism.

Methodological Issues

Key are our assumptions about whether organizations and their routines 'really exist' or are mere language-game metaphors. The realists among us, even the critical realists, might argue organizations exist with their own singular ontology, and that their components, such as resources, managers, knowledge, power and routines, etc. exist likewise. Then our definitions are attempts to represent the essential features of these existing things. Only with non-tautological definitions in place can we theorize the relationships among them and search for Nature's underlying laws.

I shall not bore you with anti-positivist arguments about the limitations of this view. I would rather agree we are all looking for some non-tautological language with which to capture phenomena of interest in and around organizations, specifically change and continuity, and we can do this without adopting a realist position. What is important is the way we use language and definitions are but one usage. There are others. So while subjectivists and interpretivists focus on capturing impressions of what is going on rather than on the things-in-themselves, we can agree that even without adequate definitions we expect ORs to serve a theoretical function that the more accepted terms, such as capital, resource or rule, leave open. Incidentally, as we get interested in organizational language we can note the curious lack of overlap between the

languages of ORs, the RBV, and theories of organizational knowledge and intellectual capital, to say nothing of strategy. Yet surely, if ORs are strategic and worthy of our consideration, it is because they are or apply the organization's intellectual capital and engage what the RBV folk think of as the firm's resources and capabilities. A compare and contrast between these literatures might be informing.

In the meantime I shall focus on the language around organizational routines, exploring distinctions such as 'what is the difference between a routine and a rule?' or 'what is the difference between a routine and an institution?' - all the while not worrying that, for sure and beyond question, we know what a routine, rule or institution really is. Lacking external realist or even discipline-based ostensive definitions we often focus on theoretical distinctions. This is how we talk about values and meanings - better/worse, moral/immoral, etc. Recall how fundamental the fact/value distinction was for Simon even though it has been rejected by many, such as (Putnam, 2002). Allowing it opens up a narrowly realist discussion to subjective terms like perception, intention and those other shades of incomplete knowledge that stand behind organizational routines as cognitive constraints to action rather than fully known factual, physical or social constraints. The shift also provides a bridge into the post-Polanyi view of organizational routines as tacit, pre- or subconscious behaviors that persistent nonetheless - a key feature of Nelson & Winter's view (Foss 2003).

The Carnegie School

Nelson & Winter worked against the background shaped by Simon and his colleagues at the Carnegie Institute of Technology (Nelson & Winter 2002:42). Gavetti et al (2007) remind us the Carnegie School's foundations are bounded rationality, decision-making structures, inter-individual conflict resolution, and learning. The core of the Carnegie anxiety was that organizations could not be fully or predictably understood as classical theory suggested, as rule-bound decision systems like well-formed theorems and computer models. For classical theorists 'rule' means something (a) fully determining, constructed, communicated and enforced by those in authority, and (b) to be responded to with full rationality. There is no need of a contrasting term like 'routine'. When 'routine' is used it is as a synonym for rule, a rule that has lost its novelty perhaps, bearing in mind that rule-making is senior management's prerogative and new

rules can surprise those they control. Likewise when standard operating procedures (SOPs) are called routines it is equally synonymous though possibly indicating a linked sequence of rules or 'modules' (Narduzzo & Rossi 2003).

The Carnegie move was towards theorizing organizations in behavioral and cognitive ways, as systems of individuals with (a) personal or non-organizational goals that mediated or conflicted with the firm's 'official' ones, and (b) limited grasp of how the official rules should determine their practice. This gap between actual (adopted) and planned (espoused) opens up the possibility of defining routines as 'unofficial' interpretations or behaviors that, once invented, persist until brought to senior management's attention and legitimated or eliminated. They might be practice-based 'workarounds', heuristics adopted in lieu of the official rules when, as Reynaud 2005 suggests, failure made it necessary to fill the 'void' at the heart of every rule.

Inasmuch as this distinction between formal and informal gives us any insight into ORs, it is based only on how routines differ from rule-bound practice. We define a rule as logical with regard to its purpose. But there is no similarly compelling sense of what a routine is for we cannot be certain it does more than satisfy. So we make no progress until we reach beyond the tautology and into the processes of OR generation, selection, storage and application and see how rules and routines draw on different mechanisms, theories of knowledge, learning and practice. Until then there is nothing but an interlocking tautological definition - a rule is what a routine is not, and vice versa. In addition there is no sense of what kind of organization might have routines as a component or feature. We must specify or at least imply a theory of the firm or organization as an apparatus that embraces both concepts. Thus a primary aspect of ORs' appeal is that they push us towards a non-bureaucratic theory of organization that reflects our concerns that bureaucratic theory is inappropriately abstract and unrealistic, indeed fails under uncertainty (Nelson & Winter 1982:4n). But where are we headed? To what theory of the firm are ORs foundational?

Implicit Theories of the Firm

Instead of trying to 'fix' the term organizational routine and build from there, which I suspect is a fruitless endeavor, it may be more useful to explore the different theories of the firm or organization implied by the various authors discussing them. Dosi et al 2000 give us a lead and, as Reynaud also illustrates with her matrix, we see a variety of uses, meanings and distinctions. Resisting the temptation to police the discussion, the technical issue is to explore whether this variety is coherent. If yes, then we have some hope of moving towards the unified theory of the routine-comprising firm our colleagues seem to be seeking.

I shall argue, no surprise, that our usage is not coherent - which fact lies at the root of our seeming muddle. But I would also argue, *contra* the policing impulse, this is a desirable result of successfully engaging the complexities of the human condition, drawing in some of the reality we experience rather than merely amusing ourselves building castles in the sky. I hesitate, though, because I suspect this is not the direction in which either Nelson or Winter would move. My case is analogous to one I believe lost on many readers of Chester Barnard's work - my personal touchstone. When Barnard spoke of systems he had biological systems in mind, a result of his friendship with and intellectual debt to Lawrence Henderson, and their common interest in Pareto's work (Barnard, 1938:78). Remember Barnard was writing before WWII operations research and the adaptive closed-systems paradigm on which we have all been nurtured.

Barnard identified various Pareto-like organizational sub-systems, social, physical and personal, and his conception of the executive function stood on their incommensurability. He used it to frame the strategic uncertainty at the heart of the firm, one that its executives must resolve through their personal agency, just as the void Reynaud draws from Bourdieu's work must be addressed with human agency. The key to Barnard's theory of organization is that it is created by acts of executive agency, hence his understanding of leadership as the 'strategic factor'. While these agentic acts reflect the practical social, physical and personal constraints on the situation, these constraints are not determining. That is the point. To put this another way, organization is always a projection of the executives whose agency brings it into being. Organizations will differ because their executives differ - even when their circumstances and

evolutionary trajectories do not (R. R. Nelson, 1991).

Incommensurability brings uncertainty to the center of the discussion, not merely as a failure of complete rationality but as a time and situation specific demand for agency (Spender 1989). Management is given a dialectical nature; on the one hand in the realm of the the rational, where rules apply and, on the other, in the realm of agency where practice occurs. The realms interact, as do tactics and strategy (Spender, 1979). Using a similar dialectical frame (Brian T. Pentland, 1995; Brian T Pentland & Rueter, 1994) following (Salancik & Leblebici 1988), explore routines as grammar, constraints on the practices of organizational language users. These constraints over agentic practice accumulate into repertoires (Feldman, 2000). The analysis is not merely one of structure and agency opposed (Archer, 2003). It runs deeper for the interplay of determining structure and under-determined agentic practice links incommensurable universes of discourse - meaning and practice. There is a dynamic between rules as abstractions or cognitive constraints over organizational sense-making and decision-making, and routines as constraints in the realm of organizational practice over the flow of uncertainty resolving agentic activity. It follows the heterogeneous way we have taken up the concept of organizational routine underlines its relevance to managerial practice and invites us to new insights into the agentic dimensions the executive's strategic activity - and that surely lies at the core of any realistic theory of the firm.

Some Distinctions

The way I contrast rule and routine above implies a breakdown, an organizational failure that parallels the more familiar market failure. Just as organizations may be mechanisms for dealing with market failure, so informal routines imply market-like transactions between the organization and others - lead users, employees, competitors and so on. These indicate instances of organizational need arising from organizational failure, what some might call experiencing the incompleteness of the organization's contracts. Others must step in, agentially, if the organizational activity is to continue.

The analysis is expanded beyond the organization alone, as a body of rules that is failing, to embrace both the organization and those others who come up with imaginative ways to

mitigate those failures with 'workarounds' or 'sense-making' - what Narduzzo et al (2000:41) call 'spontaneous re-engineering'. Those most likely to have the capabilities necessary, of course, are the employees who go beyond their rule-following obligations. They are embedded and enmeshed in the failure situation and both see and feel it. They have the experience. Feldman (2000) and Feldman & Pentland (2003) appropriate Latour's distinction between ostensive and performative to make related points, that the essential under-determining nature of rules demands the actors' agentic interpretations and contributions, and this opens up the analysis to change. We see a distinction between strategic passivity, waiting until the demand for agency arises, and proactive searching for strategic improvement and opportunity, paralleling the distinction between Schumpeterian and Kirznerian entrepreneurship. Note, too, a distinction between workarounds in the realm of agentic practice versus Weickian sense-making in the realm of cognition (Reynaud 2005). Thus one might routinize search as agentic practice, as local 'hill-climbing', rather than as a reasoned plan to reach a goal or maxima that, under conditions of uncertainty, cannot be defined.

The Carnegie idea that routines economize rule application and decision-making implies no knowledge absence or failure (Simon 1997: Ch V). There is no agency here. Rather it is an appeal to a specific psychological model wherein the participants' decision-making practice leads to a different kind of remembering and processing, a habit-forming automaticity that stands apart from conscious decision-making. Narduzzo & Warglein 2008 remind us this is known as the *Einstellung* effect, versus the naive decision-making model of the individual with but one kind of memory - short-term, populated by data and instructions in the manner of a CPU. There is disagreement about whether non-explicit learning results from the sedimentation of conscious practice, or is a kind of pre-conscious knowledge (Reber, 1993). Habits at the organizational level, presuming the organization has two types of memory, are routines institutionalized, traditional in Weber's terminology. This would follow the successful application of formal rules 'frozen into habit' (Simon 1997:139), sedimented into the taken-for-granted aspects of the situation into which employees are subsequently socialized, a notion of organization is quite different from the agentic one in the paragraph above.

Our theories of organization and management are always intertwined, so different organizational notions imply different management roles. Under conditions of Knightian

uncertainty, when there has been organizational failure and management's rules have proven inadequate, others' agency has stepped in and resolved the void. Management's role is redefined; (a) to do a better job on the rules and decrease the frequency of failure, much like minimizing scrap in the production process, and (b) to note these others' agentic contributions, selectively appropriating and legitimating those which seem productive, eliminating those that do not meet this test.

Thinking of routines as the result of repeatedly applying rules successfully without either holding the outcome in a different kind of memory or demanding agentic or sense-making contributions from the actors involved, seems to make the term 'routine' superfluous. There seem no way of differentiating between rules and routines. But 'routine' may still appeal to the distinction between the individual and the organization, defining routines at the organizational level (as do N&W), pointing to that inventory or repertoire of shared rules and procedures that can exist in many different forms - written, embedded in the organization's rituals, artifacts or the physical workplace, in the organization's culture, jargon and grammar, and so on. Rule seems too narrow a term for such complex structures that warrant 'thick' description (Geertz, 1983).

There is the quite different distinction between deployed and slack, between routines in use in a specific situation and those held elsewhere, in reserve against some future eventuality, between potential and actuality (Hodgson, 2008; Knudsen, 2008). The organizational level may be a better place to store 'slack' resources and make them more widely available. This is certainly the impulse behind much of the knowledge management literature premised on finding slack resources at the individual level and pooling them for better use.

Adopting two levels of analysis also suggests the organizational level is where the individual level practices interact, get integrated and so generate the complex dynamic system that is the organization. Organizational routines can be constraints over this interaction and inasmuch as these interaction-managing routines are open to both continuity and change, they are 'second loop' or 'dynamic routines', along the lines explored in the 'dynamic capabilities' literature (Helfat, et al., 2007; Teece, Pisano, & Shuen, 2000). Key, though, is the distinction between management's roles for; on the one hand as rule and routine makers, on the other as

selectors of rules and routines created intentionally by others or emerging unbidden from their interaction.

At this point the main observation is that the OR literature draws on many different distinctions. But the implied models of organization and management vary considerably. There is little coherence. Others agree (e.g. Dosi et al 2000). Likewise (Becker, 2008a) sees three distinct bodies of literature: recurrent behavior patterns, rules or procedures, and dispositions. Knocking out rules - for the reasons explained above - leaves two major blocs, behaviors and dispositions (meanings). So long as we assume conscious choices meanings are the thing, but when the actors' knowledge is tacit then we have only behaviors. If the field was mature and coherent we would have a clear set of mutually defining axioms, much as pressure, volume and temperature are mutually defining in Boyle's Law. In the obviously incomplete list below we see that the OR discourse is based on distinctions that are informing but mutually exclusive:

Continuity - Change	Determined - Agentic
Body - Boundaries	Mindless - Sense-making
Part - Whole	Ostensive - Performative
Conscious - Automatic	Grammar - Syntax
Passive - Searching	Isolated - Interacting
Explicit - Tacit	Managers - Managed
Individual - Organizational	Deployed - Slack
Organization - Environment	Potential - Actuality
Successful - Failing	

Distinctions that Make a Difference

In general the use of the term organizational routine remains problematic until the writer's axiomatic intuitions about organization and management have been surfaced and routine's place within them specified. This shows which items are selected from the list and

built into the model adopted. Much of the muddle arises from incommensurate models circulating through our literature. Things get complicated as soon we step beyond methodological individualist assumptions about individuals to adopt Durkheimian notions of organizations as collective entities with systemic capabilities or qualities distinct from those of the individuals comprising them. If routines are to be organizational and independent of people, the way they are generated, stored, communicated and enacted implies a different theory of organization - which needs to be spelled out if the conversation is to make any sense. This is what the search for microfoundations is about and it is a clarifying corrective to those who take collective properties for granted (Felin & Foss, 2005; Felin & Hesterly, 2007; Felin & Spender, 2009; Foss, 2007).

Earlier I used the term anxiety as something that impels a research program in the Lakatosian sense, implying one cannot frame fundamental research as systematic progress towards a well conceived theoretical goal. Even though Cyert, March, and Simon, especially, and Nelson and Winter all search for a theory of the firm, I think the latter's anxiety quite unlike that of the Carnegie group. They envisaged a very different theory of organization and thus of organizational routine. The Carnegie view is non-Durkheimian, there is no collective knowledge beyond that explicitly held and shared. In their individualistic approach a negotiated outcome is conscious, involving comprehended trade-offs and side payments. Nelson & Winter, in contrast, adopt an explicitly evolutionary view. Their organization is an organism with its own boundaries and systemic behaviors. While it depends on individual contributions much as a plant depends on nutrients, the result is something that stands apart from individuals. It has something in common with Durkheim's collective but with the notion of genes it appeals to a very different mechanism to provide continuity and change, and comes closer to the notions of self-organization and autopoiesis (Maturana & Varela, 1980; Mingers, 1995).

The most significant differences in the literature revolve around the roles implied for managers. The Carnegie view is classical in that management remains central, at the core of the organization's decision-making. In Simon's treatment management creates rules and also determines organizational values, so selecting rules generated by others.

Diagram here

Nelson & Winter's view is of an organism absorbing an inventory of practice-generated routines that are selected in or out as it engages in an evolutionary struggle. The environments of the two models differ, the Carnegie one being chosen through administrative goal-choosing or strategic positioning, the Nelson & Winter one being more taken-for-granted, revealing an economists' interest in theorizing a generic competitive economy. Rules remain fundamental to the Carnegie model, applied to the application and disposition of resources somewhat along the lines of the RBV. In the evolutionary model the differences between rules, routines and resources is less clear. Indeed, Nelson & Winter may envisage the organization as made up entirely of intangible knowledge enacted as routines, bundled and interacting perhaps, leaving us rule-less and up in the air about management's role. The environment commands the selection and retention process, not management.

The combination of Carnegie anxieties - bounded rationality, conflicting interests and values, incomplete contracts, side payments, and so on - pretty much wipes out any possibility of a rule-based approach to organization, even given the 'biased' or tweaked rationality of behavioral economics. Yet we continue to use the classical model in a triumph of denial over experience. The Nelson & Winter project is far more radical than is generally appreciated for they reject any derivative of the managed model which so shaped the Carnegie line of thought and our orthodoxy. They approach the population ecology model - footnoted on page 43 of their 1982 book - which likewise minimizes management's classical role. But unlike Hannan & Freeman, who merely black box the firm in a manner that recalls (Ijiri & Simon, 1977)'s work on power-law distributions of firm size, Nelson and Winter envisaged a viable theory of the firm.

I see N&W's project as having sympathy with Alchian & Demsetz's 'team production' model (Alchian & Demsetz, 1972). But Nelson & Winter go further, seeing the firm as more than a container for undistributed profit. It has structure, skills, behavior, culture and all those other types of knowledge that can be built up in the manner of capital and carried into future time periods. Indeed N&W see organizational routines as organization-level practical skills (N&W 2002). Their intangible capital-based model bears some relationship to that suggested earlier by (Penrose, 1959). But powerful as her notions are, she was cavalier about the learning

processes of the management team and did not offer us any theory whether of imprinting, habitual sedimentation, genetic variation and selection, or otherwise. She specifically rejected evolutionary models on the grounds they overlook the 'conscious willed decisions of human beings' (Penrose 1952:808). Appreciating the distinction we now label explicit-tacit her theory of the firm established fundamental agentic roles for managers: sense-making, learning and memorizing (Penrose 1959:53). The manager's practical limits lead to 'Penrose's Law' - that the growth of the firm is limited by the availability of functionally effective managers. Rather than invoking a bureaucratic memory (an inventory of formal rules), a Durkheimian social memory (institutional structures) or an organismic memory, her theory pivots on the management team's memory. She is ambivalent about whether this is individual-based, as methodological individualists might insist, or collectively team-based.

Without wishing to accuse either Nelson or Winter of anti-humanism, we can surmise their economic intuitions drove them in a different direction, not only to excise managers, as classically defined or as Penrosian agentic 'deciders', but also to put agentic participation by the organization's other individuals, employees, lead users, etc outside the body of the firm. There being no people left, the organism's memory must be carried in its 'genes' or, more properly, in the 'memes' constituting its knowledge-base and knowledge-processes. At issue are not only the mechanisms of change in Nelson & Winter's model, but also the drivers of and limits to the organism's changeability, whether these arise from bounded rationality, resource specificity, contextual contingencies, path dependence, plasticity (Gavetti 2005, Gavetti & Rivkin 2007) etc.

My conclusion, then, is that the most crucial distinction in the organizational routines literature is whether there is a place for human agency or not, in which case all the necessary axioms underpinning change must be gathered from some a-human entity. Here humanism, as a philosophy which invests individuals with emotions, feelings and ethical awareness beyond pure rationality, contrasts with something else - either a fully rational mechanical closed system of the kind envisaged by Ashby and later reformulated by Argyris and Schon, or a discrete self-managing organism of the type explored by Henderson and later by Nelson & Winter and Maturana & Varela (Bakken & Hernes, 2003).

If Agency is The Thing, Then What?

When, like Nelson & Winter, we take bounded rationality seriously, there are major consequences. Either we hang onto classical theory and imagine it can be salvaged by some adjustment or extension to its axioms - of which behavioral economics seems a recent example - or it throws us into the void. I suspect Simon thought, incorrectly, that a rational method of managing organizational values could effect such a repair, protecting the organization from the constraints of its participants' bounded rationality. In fact, his critique of rationality is so effective that we are forced to find axioms unconnected to individual rationality to make central to our theorizing.

Nelson & Winter likewise invoked an organizational organism with its own fully theorizable evolutionary systems and logic, and insulated it from the individuals who are the bearers of bounded rationality. Hence their disappointment, if that is the right word, that the first half of their book seems to have done more to provide metaphors for those engaged in saving the classical model than prepare readers for the radical theory of the firm presented in its second half. This seldom cited section explicates the workings of an entirely different kind of organization - though I think some engaged in agent-based modeling have lately taken up versions of Nelson & Winter's agenda (N&W 2002).

At this point I confess to being more interested in managers and what they do than in models that explicitly or implicitly deny their impact. Bounded rationality, whatever it actually means, is a widely accepted metaphor for the void that calls forth the agentic humanistic activity discussed earlier (Conlisk 1996). I am interested in the processes of organizing people who are like us, who combine rationality and agency, and much else besides, rather than in organizations envisaged as rationally constructed and operated machines. The challenge is to find ways of directing others' agency once it is admitted at the axiomatic level. But what can managing the agency of others really mean, and how might one theorize it without the axiom of economic or bureaucratic rationality?

Some know I have a horse in this race and had I titled my doctoral thesis *Industrial Routines* instead of *Industry Recipes* I might have ended up with a rosette. But I have been

struggling with these questions for a while. How to proceed? Clearly principal-agent theory cannot help us for it depends on the agent's rational responses to the principal's rationally chosen incentives and so forth. All fail under Knightian uncertainty. Agency, as philosophers consider it, is beyond the reach of incentives (Archer, 1988; Dancy, Moravcsik, & Taylor, 1988; Emirbayer & Mische, 1998; Taylor, 1985). On the other hand, I find value in Pentland's notion of routines as an open and changeable grammar that shapes the organizational community's activity (1994). Nonetheless his horse falls at the final fences because of an unconsidered assumption noted at the start of this essay: the assumption of 'the organization' as something of substance that exists.

The issue here is methodological. But it seems curious, given the absence of tangible qualities, that we begin the enquiry into organizations by assuming they exist. We have to start from a different place, one that problematizes the organization's coming into being. Only then can we share, for example, Barnard's view of the executive as its agentic creator. If the principal goal for theorizing organizational routines is to explain persistence and change the presupposition that the organization already exist creates tremendous difficulty. Persistence and change cannot then be aspects of the agentic process of its creation or destruction - as in, say, Schumpeterian entrepreneurship theory - but must be framed as adapting or re-constructing what already exists, what therefore inherently persists. Assuming the organization exists means we have to give it some substance, such as the various forms of capital, that stands outside individuals (Baetjer & Lewin, 2008; Dean & Kretschmer, 2007). Bureaucratic theorists point to structure, rules and process, RBV theorists point to 'resources', knowledge management theorists point to a body of knowledge, Nelson & Winter give us organizational genes. In each case we are left to wonder how the organization or its substance comes into existence.

Against this, methodological individualists insist the only things that exist are people, that while the natural sciences deal with the physical universe and its constituent parts, such as material and energy, in the social sciences we can only assume the existence of individuals. Organization is then about how how individuals' attention, skills, behavior, cognition, practice and so forth is aligned or channeled towards common objectives, most particularly to objectives other than their own. De Tocqueville is important here with his notion of 'association', the

evidence of peoples' coming together in the pursuit of a public interests and sense of duty to goals higher than their own. He urged the study of association as the 'mother science' on which all others depended (de Tocqueville, 2000:492). Many see this as the principal-agent issue re-framed to consider people like us rather than the anti-humanist self-maximizing automata of (Jensen & Meckling, 1976). Ultimately the humanist position is organization's only existence lies in the distinction between individuals acting in their own interest, as they are presumed to do in markets, and individuals acting towards the interests of others - in organization's case, managers. Organizations are what markets are not, or vice versa, and we cannot escape the tautology until we reach into why individuals - the only things that exist - would act in the interests of others. *Inter alia* we must wonder whether organizations are the same as societies, collapsing the theory of the firm into the theory of society, or whether the distinctions between *Gemeinschaft* and *Gesellschaft* are crucial (Toennies, 1971).

Routines as the Rhetorics of Organization

As we see, the organizational routines literature uneasily embraces both a cognitive approach - routines as patterns of meaning or local rationality to be acted on - and a behavioral approach - routines as tacit knowledge evident only in organizational or individual practices. Bridging between these two ways of human knowing draws our attention to organizational language. In principle rules are unambiguous instructions, plain language that needs no interpretation. At the opposite extreme are tacit skills, those for which we have no language, raising questions about what it means to speak about them without, as is often the case, sliding past the issue by assuming tacit knowledge is simply under-articulated explicit knowledge (Boisot). The epistemologically inclined insist on a sharp contrast between explicit and tacit (Tsoukas & Mylonopoulos, 2004). The middle ground explored by, say, (Nonaka & Takeuchi, 1995) allows that much of human practice can be shaped by language but never either directly or completely. This way of thinking leaves epistemological room for voids and agency and redefines management's roles as embracing void-filling agency and the management of this via language making and persuasion. This takes us beyond decision-making or extrinsic motivation and gets us into rhetoric as the study of the use of persuasive talk. Beyond management as decision-making is management as a talking game, persuading others to engage in their

decisions (e.g. Mintzberg, 1973, 1975).

Pentland & Rueter's 'routines as grammar' approach moves in this direction but is hobbled by their assumption that organizations already exist as a crowd of grammar-shaped practices changed by individuals' agentic choices. Though they deal with information flows they do not probe the dynamics of the organization's body of knowledge or the way that might shape the practices that create and re-create the organization. The organization's knowledge processes, and the idea that routines might be institutionalized ways of thinking, decision-making and sense-making, seem held apart from routines as institutionalized or habituated practices even while reflecting the practical constraints on organizational action. But the separation of thought and action opens up the possibility of studying how inter-personal communication - both one-way instruction and interactive talk - might shape individual action, and thereby the middle-space notion of routines as patterns of inter-subjective persuasion and their management.

As we deny organizations any ontology other than that contributed by their constituting individuals we frame organization as 'association' wherein free persons with divergent interests are persuaded to act collaboratively in the pursuit of common goals under the conditions of bounded rationality that make the Benthamite calculus of negotiated consensus fail. The evident human predilection to associate cannot be explained by social contract or the rational exercise of personal interest (e.g. Olson, 1965; Ostrom, 1990). Working through others - often regarded as a definition of organization - is about managers persuading employees and others to act in particular ways. They must work in the domain of reason, setting goals, creating plans, offering incentives, and so forth. But under conditions of Knightian uncertainty this does not work and managers must turn to agency. Entrepreneurs and strategists are agentic, by definition, bringing forth their own agency. But managers are often out of their depth, having neither the knowledge nor the agency relevant to the circumstances of workplace action, and so unable to address the challenge. They turn to others, choosing to depend on their agency. They take the sources of agency considered above, managers, leads users, employees, etc. and focus that on the uncertainty resolution task.

Rhetoric is about this practice. It explores ways of engaging and shaping others' agency through talk rather than by either force or incentive and thus offers fundamentals to an agency-

based theory of the firm. Without going into its long tradition and huge literature we see rhetoric is humanist in the sense that it speaks to dimensions of human beings other than reason, the *logos* science prizes so highly and which methodological individualist economists take as their model of the individual.

In rhetoric *logos* is complemented by *ethos* and *pathos*, modes of interpersonal influence that reach into the subjective emotional, moral and ethical aspects of our individual identities. Rhetoric presumes uncertainty for under certainty *logos* alone is sufficient to provide proof. Rhetoric, in contrast, offers only *pisteis*, persuasion beyond 'reasonable doubt' where proof is not to be had. It is clear that rhetoric is not merely about persuasion in the sense of achieving a nodding intellectual agreement - point made - nor is it simply about identifying the available means of persuasion. It is about spurring others to action and thereby realizing the rhetor's (leader's) in-the-world objectives (Holt, 2006). Its long history suggests methods for managing its process and classifying its content. But, given the uncertainty it presumes, it is more a body of heuristics than a theory. Indeed, to speak of a theory of rhetoric is misunderstand its embedded humanism, for until we have a proven theory of ourselves and our human condition there can be no strict theory of persuasion (Corbett & Connors, 1999; Herrick, 2005; Jost & Olmsted, 2006; Lucaites, Condit, & Caudill, 1999; Richards, 1936; Simons, 1990).

Rhetoric is a literature about the use of language and the practice of our interactions. Its long history has produced many authoritative versions. One establishes five steps in the creation, construction and practice of argumentation: invention, arrangement, expression, memory (preparing for delivery) and delivery itself (Conley, 1990:30). This classification is not a theory because the steps are meaningless detached from the context of persuasion. Invention is not simply coming up with telling points, their choice must be couched in the rhetor's appreciation of what the audience is prepared to attend to, to hear. Rhetoric is not a kind of institutional theorizing obliging the speaker to follow the audience's wishes. The premiss to persuasion is that we humans can learn, not simply by acquiring bits of information but by being changed - in Simon's language, we are 'docile' (1997:97). The speaker must also take a view of her/himself for as we get beyond facts and into communicating values the arrangement and delivery must be convincing, authentic, for the speaker/author is visible, not hidden as, for instance, behind a scientific paper which pretends objectivity. Indeed science itself is a highly

specialized kind of persuasion (Gross, 1990) - also illustrated in McCloskey's *The Rhetoric of Economics* (McCloskey, 1998).

Likewise there have been many attempts to classify the shaping of the rhetorical process, how the ideas chosen should be presented to best effect. Technically this is about rhetorical 'style' or ways of making an argument. Key are 'tropes'. The master tropes are metaphor, irony, synecdoche and metonymy. Recently the management literature has paid some attention to the selection and use of metaphors (Cornelissen, 2006; Hatch & Yanow, 2008; Lakoff & Johnson, 1980; Marshak, 2003). The basic notion is the likeness of things, one familiar the other unfamiliar perhaps, like the computer 'desktop' I am using right now, or the 'war on poverty'. The other tropes are less familiar in our literature though common enough in our talk. Irony is a twist to sharpen - often a revealing discrepancy between what is said and what is meant; 'Beautiful weather!' when it is pouring with rain or 'Heck of a job, Brownie!' The two other tropes deal with whole-part relations. Synecdoche uses a part for the whole - Big Ben, which is actually a bell, when referring to Clock Tower at London's Palace of Westminster or 'All hands on deck!' Metonymy uses the whole for a part - 'White House' when referring to the President or his Press Secretary, or 'the deep' referring to the ocean. Again, the tropes' effectiveness is contingent on the situation, the audience and the rhetor (the persuader).

A focus on the use of talk to create agentic collaboration shows us management must do more than lead by writing and promulgating rules, or evaluating performance against them. Such rationality-based notions are inadequate for a theory of the firm (Demsetz, 1991; Foss & Knudsen, 2003; Gibbons, 2005; Klein, 1996). Every practical theory of the firm must reach into the historically contingent uncertainties of the associative situation, whether they be transaction cost differences, subjective utility differences, ownership differences or whatever. Bringing uncertainty to the core of the management process requires we adopt theories of the individual unlike the individual rationality Simon criticized. The individual implicit in rhetoric is both persuadable and agentic, so rhetoric is an instrument management can deploy to bring organization into being. While association as De Tocqueville describes it is mutual, suggesting *Gemeinschaft*, purposive organization suggests *Gesellschaft* and managers persuading individuals to act towards the entrepreneur's or strategists' logically prior goals rather than their

own.

Managerial rhetoric is not simply about communicative effectiveness (Hartelius & Browning, 2008; Sillince & Suddaby, 2008). It is oriented towards controlling the organization's processes as an open discourse implicating a specification of associated practices. Mission statements illustrate this. Discourse analysis gets deeper showing how the tropes characterize an organizational pattern of meanings, shaping the interpretations employees put on what is going on around them (e.g. Andriessen, 2008; Symon, 2008; Whittle, Mueller, & Mangan, 2008; Zbaracki, 1998). The result is an identity, a unique culture or *endoxa* - set of commonly held beliefs - along the lines implied by (Grant, 1996). But this is not merely language, it is also the interlocking practices implied by the notion of a situated community of practice (Lave & Wenger, 1992). While the rhetorical practices of management have been of interest to researchers for some time, there has been little attempt to connect the rhetoric to organizational practices. In this sense organizational routines are the rhetorical microfoundations of organizing and provide a bridge between the two principal ways in which they have previously been theorized, between thinking and practice.

Ironically, empirical research of managerial rhetoric in action, and thereby research into the rhetorical routines or means of shaping what is being said, seems relatively easy (Arminen, 2005; Baker, Emmison, & Firth, 2005; Drew & Heritage, 1992). Overall we can redefine strategy as establishing and controlling an organizational discourse. Its tropes are the organization's routines, channels along which its language rolls without restricting it completely - to borrow a metaphor previously applied to ORs. The most prominent example of direct rhetorical shaping is the mission statement (Bart & Tabone, 1998; Campbell, 1997; Pearce & David, 1987; Swales & Rogers, 1995). At the same time our field is increasingly interested in organizational narrative and discourse (Abell, 2004; Bal, 1997; Barry & Elmes, 1997; Cheney, Christensen, Conrad, & Lair, 2004; Czarniawska, 1997; Denning, 2001; Fincham, 2002; Mumby, 1993; Schultze & Stabell, 2004; Watson, 1995).

Rhetoric and Organizational Practice

Patriotta spent considerable time in some Fiat plants in Italy. Drawing on Ricoeur's thinking he researched the way the metaphor of 'detective stories' was brought to bear to shape the conversations around production errors in the Mirafiori pressing plant and the subsequent agentic measures taken to resolve them (Patriotta, 2003a, 2003b). The unfolding of the plot reveals sequences of interactions between actants and equipment, covering the hiding of evidence as well as its exposure. He concludes "operations on the shop floor are governed by a stock of highly idiosyncratic knowledge which is enacted and constructed by means of narratives" (2003a:372). Unsurpassed in his paper are the questions that interest us most - 'Why these narrative formats (tropes) rather than others?' - for here lie the organizational routines adopted to shape the discourse and thereby the shop floor's practices. Someone (a rhetor) has wittingly or unwittingly selected from among a variety of possible tropes. Thus Frederick Taylor's hope for Scientific Management was to create a 'mental revolution'(D. Nelson, 1992). Six-Sigma, TQM and BPR are as much about changing the tropes of the organizational discourse as about changing its production's mechanical aspects. In like manner we can see the '5-whys' as a trope-like OR Taiichi Ohno is reported to have regarded as the foundation of Toyota's 'scientific method'.

More revealing is Patriotta's analysis of the construction of the Melfi factory (Patriotta 2003b). The background here is extraordinary. Pressing beyond the limits of 'lean production' technology Fiat's senior management decided to (a) build a new 'green field' plant, and (b) let the plant's future workforce design it - leading to what the auto-industry calls an 'integrated factory'. Management delegated a substantial amount of strategic decision-making to a representative group of workers. But they had to shape their discourse with training in ways that reflected the decisions to which the workforce was not normally party, such as local grant and tax issues, labor recruitment and training. The actual design of the plant was then shaped by the vehicles it would build. Patriotta reveals how the initial workforce learned the power of planning as an agentic response to chaos as Japanese and German teams arrived to install the presses and other equipment. The team resorted to laying out the physical components of the auto on the shop floor to sense of how it could be best assembled. Only afterwards were they able to develop an assembly discourse and codify it. Here the discourse was being driven by the

constraints to practice, spinning around the tropes which carried the assembly's performance criteria and strategy. Equally important was the process of 'appropriation' as the labor force began to identify with and 'own' the plant while, concurrently, the sense of the Melfi community developed. Again we can see the channeling of the rhetoric in ways that reflect and construct the organization's identity.

Working closer towards rhetorical tropes as organizational routines Narduzzo, Rocco & Warglien (2000) observed the creation of cellular telephone networks, revealing the development of two kinds of capability: new station installation and network maintenance and problem-solving. In the latter case, the development of diagnostic routines is the epitome of the agentic response to the experience of Knightian uncertainty. Orr (Orr, 1996) made important inroads into understanding how organizational diagnoses develop with his much cited work on photocopier technicians. Like Orr and Patriotta Narduzzo et al discovered the complexity of the interplay between equipment and engineers and the gradual emergence of shaped discourse. Typical of its tropes was the Xerox technicians' heuristic 'fix the customer, not the machine'. Like Patriotta's 'detective story', Narduzzo discovered the importance of the sequencing of tests, eventually codifiable as an SOP, an explicated OR. They also saw the on-going process of 'spontaneous re-engineering' (2000:41). More subtle is the way the routines reshape the narrative and information flows, which themselves become manifest in the organization's structure - routines frozen into rules.

What these snippets of research indicate is merely the potential of an enquiry into rhetorical devices as the ORs which shape the organization's discourse and thus become its microfoundations.

Concluding Comments

In the first part of this paper I pay attention to the language being used to discuss organizational routines. It seems valuable to look at this as a phenomenon in its own right rather than take umbrage and attempt to police the language in the way made so famous by Pfeffer 1993. What is clear, of course, is the discourse's variety. I make two points. First there is no overall coherence and it becomes difficult to know what might be meant by the term

organizational routine (OR). As we move in this direction we see, as do Becker and other commentators, a divide between behavioral and cognitive approaches, between the tacitness of routines and capabilities and the explicitness of emergent cognitive structures and meanings. Second, the principal way of stabilizing these definitions is to identify the writer's implicit theories of (a) the firm or organization and (b) the individuals therein. Much of the OR literature stands on the bureaucratic model. This sees routines as implicit rules, typically derived from successful practice. Individuals, both employees and managers, remain central to the analysis and carry the routines forward into future time periods.

A quite different literature grows out of Nelson & Winter's work. Here the organization is a self-managing organism with the routines being carried forward in a very different manner. While individuals play a role in generating routines, they are not selected by management, as above, but by evolutionary interaction with the organism's environment. Management's role is unclear since the model's strength is that the organism does not suffer the bounded rationality that individuals do.

The approaches differ in many ways, but most importantly they differ in the handling of Knightian uncertainty. Along the lines of Penrose's well-known dismissal of evolutionary theorizing, I see human agency is the necessary resource called forth by uncertainty, what she calls 'will' - in ways we know from Nietzsche. It is not clear where agency figures in the N&W model, a corollary of adopting a Spencerian model of social evolution that is inherently determining. Penrose, in contrast, sees the economic universe as open awaiting our construction of it, a notion that is now part of the Austrian positions articulated by, say, Lachmann. So far as I know, there has been little criticism of the N&W approach from this direction.

Making agency central clearly shifts the agenda. Much of the OR literature presumes organizations exist, explaining their continuity as deriving from stable organizational routines. This convention has spawned a counter-literature which, arguing for routines as a mechanism of change, focuses on the gap between the routine and the individual actor, so making a space for agency and thus for change (Feldman & Pentland, 2003; Howard-Grenville, 2005). While this opens up a different view, it leaves unresolved the theory of the firm or organization in which

this happens.

I argue agentic activity is fundamental to organization, it goes far beyond being an adjustment to the classical model. To get at a more suitable model we must grapple with how agency itself is managed and this gets us into rhetoric, the art of persuading others to harness their agency to the organization's goals. This leads on to effective practice, while keeping managers central to the process. As we look into this we see a radically different notion of ORs as the rhetorical practices used to shape others' agency and so align it with management's objectives.

As far as I know no OR-oriented research has yet been done along these lines. But work by some, curiously all Italian, shows some promise of a relatively simple way of doing empirical research into ORs, so defined. This leaves open questions about the empirical research into OR defined according to either the behavioral or the cognitive literatures, about what it actually reveals and whether the results should be associated with the individual-based models or with the N&W organismic model.

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