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### Organizational Capital: Concept, Measure, or Heuristic?

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### Human and Social Capital

Management and organization theorists' interest in 'organizational capital', as something distinct from the organization's financial and physical capital, goes back at least to the time of Adam Smith and his political-economy colleagues. In spite of their obvious academic interests they were practical men and closely observed the workings of the world around them. Unlike many of our economist colleagues, they had no problem seeing the economic impact of peoples' knowledge and skills. They also recognized the very real costs of acquiring them and so were interested in an economics of human knowledge.

In this line of reasoning Smith concluded there were four types of capital; machines, buildings, land, and peoples' 'acquired and useful abilities'. He believed an effective division of labor would significantly facilitate the development of such value-adding skills, and experienced people should be recognized as economic assets. Indeed, human assets were to be understood as the post-mercantilist basis of the nation's wealth (Ekelund & Tollison, 1980). But post-Smith and post-slavery there was considerable sensitivity to defining people as transferable goods and a corresponding reluctance to use terms like 'human capital' - until Marshall's and Pigou's reminders that what working people know must surely be made central to any workable theory of economics (Marshall, 1964; Pigou, 1928). Their comments tempted a new generation of macro-economic and management theorists to probe the rising importance of intangible or 'soft' assets (Kendrick, 1956; Schultz, 1961; Tobin, 1969). Thus today's view, that an organization's total capital comprises both tangible and intangible elements, has been around for a while (e.g. Gort, Grabowski, & McGuckin, 1985; Prescott & Visscher, 1980); especially since 'human capital theory' was opened up by macro-economists such as Johnson, Schultz, Kendrick, Solow, Becker, and others (Becker, 1964; Johnson, 1960; Solow, 1956).

Human capital theorizing was mostly at the macro level, estimating the national returns to using new technology (Solow, 1957) or to expenditures on education, estimating those investments and returns at an aggregated level. This revealed, for example, that 'the income of the US has been increasing at a much higher rate than the combined amount of land, man-hours worked and the stock of reproducible capital used to produce the income' (Schultz, 1961: 6). Schultz pointed to the 'discrepancy' between what can be observed, in terms of GDP growth, and what could be 'explained' by conventional economic theory. That this discrepancy was labeled 'human capital', in spite of Becker's misgivings, does not help us much unless we can get further into and theorize its workings. But it is clearly important economically

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and for that reason theoretically, politically, and managerially. Many economists tried to estimate the nation's stock of intangibles and their economic contribution. In 1969, for example, Kendrick argued around 50% of the entire US capital stock was of this 'immaterial' nature (Mankiw, Romer, & Weil, 1992: 415). We can surmise the proportion is even greater now we are in the Information Age (Castells, 1996; Drucker, 1988) and have a service-dominated economy. For the US corporations, the Brookings Institute estimated that the soft assets of the Fortune 500 companies represented 38% of their market value in 1982, but had risen to 62% by 1992 (Dzinkowski, 2000: 32). Again, we can presume this proportion has continued to rise along with the financial services and 'knowledge-intensive' high-tech industries. But estimating the scale of these assets does little to reveal the mechanisms that connect investments in education and so forth to the human capital generated or the national economic outcomes. In fact there is surprisingly little empirical evidence about whether such common-sense links actually exist (Hotchkiss, 1993).

As an alternative to working at the macro-level, trying to size the economy's aggregated human capital and compare it against other more tangible types of capital, is to try and identify human capital's components, coming up with sub-types, and thence move towards a more comprehensive theory. For instance, it is clearly helpful to distinguish background educational investments, not related any specific value-generating activities, from firm-specific activities such as training in making and marketing products like Oracle Data-base 11g or the Xerox Nuerva 288 Digital Perfecting System, or in learning how specific organizations, say TIAA-CREF, might make profitable use of these afore-mentioned products (Becker, 1964). Background or infrastructural investments may well make for a more civil society, but economists recognize business managers operate with specifics rather than academic generalities, and are reluctant to expend time and money training employees into forms of human capital when the resulting skills such as C++ programming can 'walk across the street' and be readily applied by their competition (Kessler & Lulfesmann, 2002).

Work itself is often educational as individual employees undertake new initiatives to make their practice easier or in some other way more effective. Indeed, this job-related learning so intrigued Adam Smith that he made it the core of the *Wealth of Nations*, famously illustrated in his pin-making example. A modern instance would be 'quality circles' or any of the other institutionalized 'learning-by-doing' practices (Arrow, 1962; Bahk & Gort, 1993; Yelle, 1979). In addition to this discovery of new knowledge wealth by 'drilling down' into a specific practice, beneficial results in one area also spill over to colleagues. Employees are constantly educating each other and increasing each other's human capital in ways that make it difficult to distinguish the consumption and generation of knowledge, or indeed to know whether the processes are individual or collaborative. There is the SECI (socialization, externalization, combination, internalization) model in which individual or small group discoveries of novel methods are shared with the rest of the organization (Nonaka & Takeuchi, 1995), though this may be little more than a

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restatement of Coleman's macro-micro model of the social process (Coleman, 1990). Aside from raising difficult questions about soft capital's source, location and who might actually own it, this approach also implies three levels of analysis: socio-economy wide, the 'meso-level' of the firm or institution (Field, 2003: 139), and the individual employees, so adopting hierarchical categories familiar from the work of Parsons and Gurvitch (Gurvitch, 1972; Parsons, 1960). Both tangible and intangible capital may be present at all levels and, if so, we sense important questions about the relationships between the levels.

Other researchers move in different directions, contrasting different types of 'soft' capital at each level. At the meso-level of firms and institutions, in addition to employees, equipment and financial capital, organizations have structure, rules and accounting arrangements to help everyone understand what they are being asked to do, and to measure and help integrate their work with others. These can be considered non-human components of the organization's 'structural capital' – part of the bundle of resources developed to help the firm integrate its factors of production and division of labor, and ensure the employees' skilled activities are well aligned to its objectives (Grant, 2003). While much of this structural capital could be taken to be tangible, written rules, performance metrics, and so forth, we realize much is informal and cultural. Such relational assets seem to be 'of the organization', persisting beyond any particular employee's tenure and standing apart from them and their skills, and so differentiable from the individualistic or personal dimensions of 'human capital'. From this point of view organizational capital might be defined as a sum of the organization's human and structural capital. Some have labeled this the organization's 'intellectual capital' to distinguish it more clearly from the organization's tangible financial and physical capital (Edvinsson, 1997; Edvinsson & Malone, 1997). The organization is also embedded in a network of relations with suppliers, customers, regulators, competitors and so forth (e.g. Porter, 1980). Its place there is earned as the firm becomes a legitimate and functioning part of the industry's structure, so this place too is a dimension of its structural capital, engaging customers and suppliers and reducing its external transaction costs.

Complementing the economists' interest in human capital formation, the intangible outcome of education, training or learning-by-doing, is the sociologists' interest in 'social capital'. This is a way of measuring the strength or richness of a society's distributed intangible relational resources. Social capital is broadly defined as the system or network of relations between people, organizations and other social entities that facilitates their activity, both individual and coordinated. Social networks are evidence of social capital, infrastructural and institutional investments made intentionally or unintentionally (perhaps arising as spillovers from the intentional activity of individuals). Individuals and socio-economic entities such as organizations and institutions are embedded in the social networks which result from previous interactions. Often costly to make happen, these generally leave memory traces that ease and facilitate further interaction. Thus to see an industry's structure is to see an aspect of the constituent firms' social capital.

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Social capital theorizing has exploded over recent decades, adding new twists and questions to traditional sociological concerns (Baron, Field, & Schuller, 2000; Field, 2003; Halpern, 2005; Lin, 2001). To date, the theorizing has been largely shaped by the work of Putnam, Coleman and Bourdieu who nevertheless had rather different ideas about what social capital was and how it worked to open up new possibilities and facilitate others. Putnam, following De Toqueville's interest in 'association', argued at the macro level, that the US's social capital is in decline i.e. we Americans are now 'bowling alone' and making less investment in our social relationships, even though we know these are useful when we want to get things done or deal with the unexpected (Putnam, 2000). In socioeconomic terms, Putnam argued, the transactions costs of social life are increasing. In sociological terms we have less access to and are less supported by our society, and are obliged to depend more on our own endeavors or on deliberately engineered social policies and government institutions such as welfare.

Coleman focused at the meso-level, mostly on the effects of community culture on educational achievement. His model is more about where particular social capital is located, who can access it and how, and thus about the interaction between the social capital of particular communities and the life-chances of those within them. Bourdieu, from a Marxist perspective, focused even more narrowly on how particular forms of social capital were generated and harnessed to protect the privilege and interests of those who possess it – particularly on how elites help each other sustain their advantages; old boy networks and so forth (Field, 2003; Whitley, Thomas, & Marceau, 1981). Instead of probing for where we might find and maybe measure such soft capital, most of the debate among human capital theorists has been about whether there are empirically verifiable links between educational expenditure and economic growth at the macro level (Bils & Klenow, 2000; Hartog & van den Brink, 2007; Mankiw et al., 1992). Social capital theorists, in contrast, have been more concerned with the family as social capital's principal mode of action and debating, for instance, whether supporting families can have results that are more beneficial to individuals than government funded programs (Becker, Murphy, & Tamura, 1990). In short, there has been more focus on the causes and effects of these two types of soft capital than on identifying or measuring their occurrence.

Theorizing along these lines has led to a proliferation of adjectives for 'soft capital'; intellectual, immaterial, relational, cultural, symbolic, innovation, environmental, customer, consumer, reputational, or social (Dean & Kretschmer, 2007). Some argue this has gone way too far, reducing the entire 'soft' capital discussion to a mish-mash of conflicting definitions (Robison, Schmid, & Siles, 2002). Paxton, for example, questions Putnam's conclusions and empirical findings (Paxton, 1999), while Fine thinks the explosion of talk about social capital has seriously damaged both sociological theorizing and social policy (Fine, 2000).

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There are both theoretical and empirical difficulties. On the empirical side the attempts to measure either human or social capital have probably added to the confusion. From the theory side, one difficulty is the idea that either human or social capital can be conceived, measured or theorized independently of the other. Social capital is about individuals and their interactions just as human capital presupposes those interactions too. Consequently it may be more productive to think about how the concepts are related in spite of major differences in method, assumption and orientation in the two literatures. The microeconomic foundations of human capital theory lead to its prioritizing the individual and her/his processes over those of the collective, especially evident in 'rational choice theory' arguments that human capital would only be properly generated by individuals for their own benefit (Lucas, 1988). Social capital theory partially complements this view, arguing that social capital facilitates the development of and so shapes the individual's human capital, especially influencing those who are disadvantaged and not in a good position to make the rational choices assumed by the human capital theorists. I.e. social capital theory sees society as made up of individuals with heterogeneous resources and challenges. Thus human capital theory is inherently individualistic and politically conservative while social capital theory is inherently collectivist and liberal, and the distinction between them may be more political than fundamental. Social capital theorists see the community's social capital as a crucial form of collectively constructed infrastructure that helps raise the constituents' quality of life just as efficient utilities or legal institutions do. They also feel this infrastructure should not be left to chance or market forces, that national or regional policies are implied i.e. social capital is something to be managed. Relying on spillovers from individually directed activities is clearly not adequate. In contrast, human capital theorists adopt a more 'methodologically individualistic' approach and presume the world works better when investments are made individually, intentionally and rationally, with personal benefit in mind. Thus human capital is an essentially private good while social capital is more of a public good. Alternatively we might say that human capital is what individuals bring to their life and market choices, while social capital supports them when market failures occur.

### **Theorizing organizational capital**

When theorizing organizational capital we might be able to draw on both sides of this discussion. Social capital theory can be applied by imagining the organization as a society writ small, with mutual trust and interdependence between its members. Social capital theory does not require the capital in question to be wholly inter-subjective like language, distanced or held in some place other than by the organization's members. While it clearly can be held in documents, rules and so forth, and be an aspect of the relations between the community's members it can also be held as the common knowledge they share (Grant, 2003; Middleton & Edwards, 1990; Sunder, 2002). These elements of the organization's knowledge and skills are semi-public goods as far as that particular community is concerned i.e. they operate as public

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goods within the meso-level context of a particular organization (Coleman, 1974). When such collective capital exists, much of the organization's knowledge and experience will be available to other employees without their engaging in any explicit or implicit contractual activity i.e. members are able to access each other's knowledge without incurring the corresponding liabilities that would arise from market relationships (Bechky, 2003). Social capital implies some suspension of market forces just as friendship is defined as 'not keeping score' of the exchanges. In contrast with those who believe the market is the key to efficiency, many social capital writers assume collaboration provides for improved economic efficiency as transactions costs are lowered under circumstances of partial market failure. Thus one employee, facing a particular problem, is able to appeal to expert others within the organization (community), as custodians of the firm's accumulated expertise (Gray & Meister, 2004). We can also argue that when social capital is present newcomers have to go through a period of training and socialization before they can access it, so becoming educated or institutionalized into the organization's social capital assets and processes (Karsenas, 2006; Wanous, 1992).

But social and human capitals become increasingly entangled the more closely we look at them. Instead of assuming, as much of the literature does, they are different merely because they are defined by different languages and theories, we might more usefully wonder how they interact as they contribute to a middle-ground concept like 'organizational capital'. One of the risks with seeing the organization's capital through the prism of distributed social capital notions like 'trust', 'shared knowledge' or 'networks' or, contrasted with this view, thinking of it as the sum of human capital components like the employees' 'skills', is that organizations may differ significantly from both societies and individuals. If this is the case, then mapping intuitions from either social or human capital theory into the organizational realm might well prove problematic. While these theories can obviously furnish some insights, their relevance is contingent on the theorist's assumptions about the nature of the firm or organization. What counts as organizational capital, whether distributed and holistic or reductionist and atomic, must somehow fit into or with an appropriate theory of the organization.

We know organizations are often considered mini-societies and that much use can be made of sociologically based theorizing. But an organization may be much more than that (e.g. Morgan, 1997). *Inter alia* it may be a contrived quasi-mechanical device for achieving specific objectives, and this is not an entirely satisfactory metaphor for a society which, we presume, has organic qualities. Alternatively an organization may be considered a special market for human capital such as managerial capabilities (Williamson, 1970). Or it may be a political system (March & Olsen, 1989). Of particular relevance to theorizing organizational capital is the view of the firm as a device for converting some kinds of capital (such as the factors of production, including human and social capital) into other kinds of capital (finished goods, services, reputation, profit, etc.). Both human and social capital theorists are sensitive to questions about the transformation of one kind of capital into another, indeed their interplay was central to

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Coleman's analysis as he probed how social capital contributed to the emergence of human capital (Field, Schuller, & Baron, 2000; Pennings, Lee, & Van Witteloostuijn, 1998). Thus social capital theorists might argue that investing tax revenues in education raises educational attainment and the individual's human capital – and that improves the culture and the economy and, in turn, raises tax revenues. Human capital theorists might argue that decreasing taxes gives individuals more disposable income that they might choose to invest in their own education and so increase their life chances, and as a spillover, expand the tax base allowing government to create more social capital – and so it goes. But if the application of social capital results in human capital, and the application of human capital results in social capital, the distinction between them becomes less a matter of definition and more to do with the analyst's points of view and departure.

Economists treat individuals as the principal objects of their analytic attention, and their interaction is what economics theorizes. By 'black boxing' firms economists reconceive them as individuals which can be brought into the framework of rational actors economists regard as their subject-matter (Khalil, 1997). Sociologists presume society exists and is the object of their attention. They then explore, perhaps, how the social structure constrains and shapes those human choices that are not mere self-maximization which, in turn leads to restructuring and new forms of social capital (Giddens, 1984). In short, the distinction between the human and social kinds of intangible capital may be no more than a methodological contrivance that reflects the theorist's initial assumptions. Social capital is inter-subjective, relational, distributed between individuals, while human capital is intra-subjective, a measure of what individuals bring to the world; but as we consider their interactions within the organization things get even fuzzier. The basic distinction between tangible and intangible assets seems to stand up, but that between the social and human types of organizational capital seems increasingly frail.

But where might organization capital fit into this? If we take it that the organization's capital comprises some human capital – an aggregation of the knowledge assets of the organization's individual members and their participating affiliates, those working for the firm's outsourcers, sub-contractors, etc.- plus some social capital - that of the productive relationships within the firm and those with the industry's other participants – the boundaries between the interacting categories become blurred, as the SECI model suggests. Just as the differences between human capital theory and social capital theory depend on assumptions about what individuals and societies are, and become increasingly problematic as the focus moves onto their interaction, inter-penetration and mutual constitution, so the sub-categories of organizational capital blur as we consider how they interact and transform each other. When workers are trained into the firm's way of working are they developing their individual capital – or taking on board the firm's collective (social) knowledge? This fading of categories gets even more serious when we think of the firm's social capital as partially tied up in the network of its relations with customers, suppliers and so forth. Does the social capital of this network belong to the firm or to its related entities? Along these lines

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we see that much of the organizational capital literature's seeming clarity is actually dependent on uncritically adopted assumptions about the firm as an isolated system of production, an abstraction with clear boundaries and without theoretically significant strategic ties to the agents of supply, demand, competition and regulation among which it is embedded. This is not to say the analysis of organizational capital collapses, rather that it shifts its purpose. Instead of being an academic step towards a tenable theory of the organization as a distinct entity it becomes, instead, more about managers' everyday practice and drawing their attention to the firm's intangible capital, part of the heuristics they might use to guide their allocation choices.

The root question, as ever, is about the underlying concept of organization into which these notions of capital are supposed to fit. The organization capital theorist is obliged to clarify what s/he means by 'the organization', given the number of alternative views, in the same way human and social capital theorists put forward notions of individuals and societies. While their choices are often implicit they reflect the greater coherence of the economic and sociological disciplines within which they work. In contrast, as the popularity of Morgan's *Images of Organization* shows us, organizational science lacks this coherence, we traffic in many images. Some are contradictory others are mutually exclusive. In general we organization theorists are reluctant to admit that there is no really satisfactorily coherent theory of organizations. Consequently the organizational capital theorist must stake out the ground quite carefully. The resulting concept of organizational capital may be more contingent on the particular historical period, industry, regulatory regime and so forth, and so less universal and useful to the discipline as a whole. But perhaps we cannot have a general concept, as indeed we may not be able to find a general concept of the organization either. There is an implicit criticism of organizational theorizing here, especially of its multiple terms and general conceptual instability along the lines of Pfeffer's call to establish some empirically reliable theory rather than keep proliferating un-established and contradictory alternative theories (Pfeffer, 1993). Economists, on the other hand, seem to be more honest about their failings, more or less agreeing there is, as yet, no satisfactory theory of the firm (Demsetz, 1991). But we should bear in mind Coleman's project to employ human and social capital concepts to unite economics and organization theory (Field, 2003).

### Capital itself?

An alternative to defining what we mean by the organization, and using that definition to then define what we mean by its capital, is to turn the analysis around and consider how the notion of organizational capital might be useful to practicing managers. Why are we chasing this concept anyway? If the meaning of organizational capital, and its usefulness to practicing managers, is being examined then it may be enlightening to switch the focus from 'the organization', as in the preceding paragraphs, and onto 'capital'

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itself. One of management's roles may be to make resource allocation decisions such as choices about how to allocate the firm's capital to different activities in the manner suggested by March's distinction between exploitation versus exploration (March, 1991). Capital, as the organization's most fundamental resource, may be what is being allocated in the strategic decision process and that may be why it seems so important to identify and theorize it. A slightly odd definition of management, perhaps, especially to those who think it is about organizational design and 'command and control'. But this definition has the merit of being consistent with an economic approach. Indeed we can argue that when managers make decisions about where to locate activities – in transactions costs terms, inside or outside the organization, or in deciding to consume one kind of capital rather than another in the production of a third type – it is really the capital resources that facilitate activity that are being re-allocated, so rephrasing Fisher's definition of capital as the durable result of past activity capable of transforming future production.

If we look at capital itself rather than the organization in which it is located, theorizing organizational capital seems to hinge on the distinction between the organization's tangible and intangible resources. Given the difficulty of dealing with intangible resources, this literature gains most of its traction from the seeming solidity of the notion of tangible resources; land, buildings, equipment, inventories of raw materials and finished goods and so forth. Intangible capital is what they are not, yet what still seems of value. Tangible resources are what we might find both in the factory and valued on the firm's balance sheet, though these values are far from being the same thing as the objects and resources themselves, as the long history of accounting reminds us. The accounts are simply a model of things that exist, contingent on some agreed method of valuation, and this value is determined before the capital is applied and revenues generated. A firm's accounts only make sense because they include terms like 'capital' and 'revenues', yet they are so familiar we scarcely stop to think how they came into use or why they are useful, and this is where Dean & Kretschmer offer us a fine review (Dean & Kretschmer, 2007). As they show, the term capital has several important functions. One is to distinguish between the value of the firm's assets and the cash flow that is generated from the previous application of capital. Capital and revenue differ and it is important to realize that money in the till may not mean the assets shown on the firm's balance sheet are useful for earning future revenue. Likewise even when the firm's intangible assets can be identified, such as goodwill or employee skills, they need not be of value. The relationship between the firm's assets and their revenue potential is becoming increasingly problematic, and it is widely appreciated that standard accounting practice is less and less able to identify the firm's real economic value (Brainard & Tobin, 1968).

This is not the place to rehearse the entire history of the concept of capital (Harcourt, 1972). Dean & Kretschmer's review helps us see the term has served many different purposes as, over the millennia, the notion of economic activity itself has changed. Two things seem evident. First, following Fisher, the concept of capital points to those durable assets, either acquired directly or accumulated from past

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activities, which are applicable in future periods. Capital is that which is still held separate from the on-going processes of resource transformation, in this sense un-applied and available for application in the future. It can therefore carry across time periods into the future, to be applied by melding it with labor, equipment and land to generate revenue. In its standing apart from labor it is distinguishable from the other factors of production for they embody labor and are prisoners of time, both depreciation and erosion. Capital seems free of time's constraints. Equipment and technology may be purchased out of capital but are themselves products of a melding of capital and labor elsewhere or in a different time period. We also need to remember the way the term is used may reveal its true meaning. As the history of the theorizing reveals, capital remains a puzzle that may do no more than refer to a socio-economic system, as a religious symbol refers to a system of belief and practice. Or it may exist as a thing in itself that seeks its own accretion, much as we might argue individuals and society are the apparatus our genes have chosen to move towards a higher evolutionary possibility. Or should we treat it as a model of something else such as the tangible and intangible resources necessary to move the organization along the non-zero cost evolutionary path implicit in, say, Nelson and Winter's model? (Nelson & Winter, 1982). Is the use of the term less scientific and theoretical in the sense of its being a fundamental category of resource, like human intelligence, or is speaking of capital merely rhetorical, something to do with the rhetoric of the managerial process that actualizes their power? (McCloskey, 1998).

### Measuring organizational capital

Even assuming we are looking at capital as an independent variable in an organizational model, the notion is meaningless if it cannot be valued. Even when the term is used metaphorically it is assumed that it is at least potentially possible to value the intangible resources being referred to. Thus a next step might be to explore measuring an organization's capital directly - or at least its change from one time to another. There is already a substantial literature on this (Bontis, 2001; Dzinkowski, 2000; Kannan & Aulbur, 2004) and there are three bases on which to construct such measures. Two correspond to ordinary accounting measures, inputs and outputs, resource costs versus anticipated revenues. Thus skills training can be measured in terms of inputs, years schooling and so forth, or in terms of future revenues, wage increases perhaps. Market valuations are more likely to be based in future earnings while many book values reflect cost and allowable depreciation. Thus Tobin's  $q$  and the idea of 'intellectual capital' itself grew out of the increasing divergence between market and book valuations. The third method of valuation is more based on comparison. Revenue per employee, for instance, can be compared for two firms and the difference, assuming the firms are in the same business and the results are corrected for any difference in tangible capital allocation, can be considered a surrogate measure of each firms' intellectual capital as it is applied in their respective business models.

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As interest in intangible assets grew at Skandia and other firms, many capital measurement schemes were constructed, often mixing all three modes of valuation in spite of their heterogeneous theoretical bases. Thus the Balanced Scorecard offers four dimensionally or theoretically distinct metrics; financial, customer, internal and innovation (Cooper & Kaplan, 1988; Kaplan & Norton, 1996). These might be seen as four distinct views of the organization; financial as the shareholders' view, then the customers' view, the employees' view, and an overall view of the organization's future. The point being that by melding four different theories of the organization, this multi-dimensionality captures more of the organization and the dynamics of its strategic situation and potential than any single dimensioned view can. The Skandia and IC-Index approaches offer many sub-measures, raising serious questions about the scheme's implement-ability (Bontis, 2001). On the one hand there is the methodological temptation to search for a single underpinning rationality; on the other the challenge of helping practicing managers get a sense of, for instance, how to bring the Balanced Scorecard's different dimensions into a coherent basis for resource allocation decisions. This is the same kind of challenge as is presented by trying to take both human and social capital considerations into account in any particular strategic situation. The issue, as noted earlier, is the implicit theory of the organization that is the basis for meeting these theoretical challenges. Mapping human and social capital notions into the organization's capital, suggesting this can ultimately be defined as the sum total of both kinds is all very well on paper but of no great consequence to managers who need to know how to trade off, say, seven units of human capital against five units of social capital. The challenge is no more easily met if the categories are changed to those of the Balanced Scorecard. One might observe, charitably, that the literature is remarkably silent on these questions. Thus while we seem on sound ground suggesting that the organization's capital is some sum of subsidiary types of capital, the flaw in the proposal is that we do not know how this sum can be calculated given that we have no coherent theory of socio-economic capital that can include, say, the different human, social and organizational types (Barney, 1991). In the background here is Barnard's notion of the organization's 'system' as an executive-generated synthesis of its three subsidiary types of system: physical, social and psychological (Barnard, 1968).

Before we reconsider Barnard's approach towards a notion of organizational capital we might examine the doubts that Dean and Kretschmer raise about the wisdom of using the term capital for intangibles, in particular to probe the managerial need to describe and maybe measure those aspects of the organization's resources which can be carried from one time or place to another. The separation of capital from the firm's other resources, such as land and labor, creates an epistemic space for managerial or entrepreneurial decisions about bringing them together again, Humpty Dumpty style. Without this separation we have no description of management's decisions and thus no clear notion of what it is that managers are contributing to the organization. The separation implies a theory of management and, as a corollary, a theory of the organization to be managed. Thus behind the economic notion of capital stands a Smithian notion of the firm that it is not too far from what we might call the CMU (Carnegie Mellon) view

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of the firm as a mechanical apparatus within which management is the cognizing and decision-making component and therefore a specific type of resource in and of itself (March & Simon, 1958). The Smithian, or rather Marshallian, entrepreneur compounds land, labor and capital so as to maximize profit, just as the CMU decision-maker is allocating the firm's tangible and intangible resources to best effect. The underlying insight is that land, labor, capital and entrepreneurship are economic resources with different dimensions; land's essential nature is that it is fixed and cannot be moved elsewhere while labor is only valuable when applied and that must be in a particular time. Capital, on the other hand, is both durable and movable, across both space and time, and in these respects a more perfect resource, the most fungible and risk-free. It is an economist's dream, as Fisher's definition suggests. Paradoxically it is only in its application and exposure to risk through managerial decision that capital has the possibility to increase itself leading, perhaps, to Marx's analysis of the money-commodity capital cycle. Dean and Kretschmer note that applying the term capital to intangibles generally, and ideas and knowledge in particular, is highly problematic given that only in the most anecdotal way can one argue intangibles are the durable result of past activities. The analysis seems to stress causality and deny invention, insight and the very flexibility of the creative mind. In the same way that value can spring from next to nothing, escaping a causal analysis, so ideas and knowledge can become obsolete in the way that vacuum tubes, like the dinosaurs, were quickly extinguished by semiconductors. Nor can ideas and knowledge ever be really comprehended as separable from the particular individuals who know how they can be applied.

On the other hand Dean and Kretschmer miss the way the term 'capital' is now being used to help managers discuss allocating the variety of resource types that they see comprising the organization. More and more these include ideas, learning, as in the SECI model, and specific items of knowledge like patents and intellectual property (IPRs). That these are intangible and thus unlike the organization's other resources - land, equipment, financial capital and labor - does not remove the manager's need to talk about their application (Teece, 2000a). Dean and Kretschmer probably make a categorical error in assuming that managers should talk and think like academics, respecting the purity of their concepts, rather than as practitioners with approximate measures and tangible problems to solve. Perhaps their objective should have been to research how the term capital is being used strategically, especially in the context of Tobin's q and the rising attention to intangibles which, as we have seen already, triggered an interest in human and social capital as well as the development of the presently hugely popular Balanced Scorecard. Given that intangible organizational capital now figures largely in most managers' resource allocation discourse and process, the absence of ideas or theories of how the various types of capital are reconciled in their decisions becomes ever more pressing. This process of combination or coordination is the real problematic for a theory of organizational capital, not the tangibility or otherwise of the resources being considered.

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The positivist researcher is likely to be searching for a universal theory of intangible capital valuation and measurement, along the lines, perhaps, of rational choice theory. Or even an empirically embedded one like transactions cost theory, empirical in the sense that the relative costs within and without the firm are likely to be contingent on its particular circumstances and these need to be discovered before the allocation decisions can be made. These theories presuppose a conjunction of rational decision-making and the determining facts of a particular context. Organizational capital is then the knowledge the firm has available about its context and the options open to it. Some of this will be objective knowledge of the situation, scientifically correct theories of the situation, while some may be known tacitly as successful practice in that situation. Steel-making, for example, involves dealing with chemical processes, some of which are scientific, some embedded in the work practices, some articulated into rules, procedures and routines, some representing the firm's knowledge of its customers, suppliers and competitors (Khanna, Mitra, & Gupta, 2005). Here we are focusing on what is known about the organization's situation and the action options available rather than on the form that knowledge might take, scientific data which can be communicated with precision or tacit knowledge that can only be communicated with difficulty in the manner suggested by the SECI model. Many of the comprehensive definitions of organizational capital as including the identifiable tangible assets, together with the employees' skills and the network of relationships they have available, point towards this imagined 'total understanding of the situation', positivist in the sense of being a complete model of that situation's 'reality', described in the language of, perhaps, land, labor, equipment, and so forth. A contemporary description of the business's environment might also be framed in the language of Porter's 5-forces model (Porter, 1980). Here the environmental description is actually of those with the power to disturb the firm's quasi-monopolistic rent stream. The hope of many who use the Balanced Scorecard is of such a four-dimensional understanding of the organization's external and internal situation and strategic possibilities.

Along these lines we can define the organization's 'capital' in terms of its managers' secure grasp of the business opportunities available through their decision-making, a practice-based complex of what they know about its situation and the resources at their disposal to change it. It comprises the firm's past choices of land, labor, equipment, customers, and so forth, together with the consequences of these choices, such as accrued profit and organizational learning, together with what the organization's managers know of the situation and the options available through all possible alternative allocations of those resources. Along similar lines we might define social capital in terms of what a particular community knows of its situation and its options to change that, such knowledge being manifest as that society's institutional arrangements (North, 1990). A similarly framed definition of human capital spins around each individual's knowledge of her/his situation and options to change or be accepting of that. The impulse behind education, say, is that it increases one's life chances by both informing individuals of their options and by giving them some of the resources they need to change their reality. We can likewise work up a definition of organizational capital. In practice, of course, we know the positivist dream

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of complete knowledge and power over the situation leads to an impractically academic and un-pragmatic notion of what an organization's managers really do. While Simon's celebrated attack on Rational Man and total understanding is widely appreciated (Simon, 1997), we have, as yet, few well-articulated responses in terms of theories of managerial decision-making under uncertainty together with a corresponding theory of the organization (e.g. Mintzberg, 1973). The proposition, therefore, is that a definition of organizational capital must turn on the theory of the organization that underpins it, just as theories of human or social capital turn on the models of the individual or the society that underpin them. The theory of the organization also includes a statement or theory of the organization's environment – be that a system of perfect markets, political power or whatever. Ultimately, to meld human and social capital theories into a comprehensive theory of the socio-economy requires bringing the underpinning definitions of the individual and their social arrangements together, a search for a socioeconomic 'theory of everything' that matches the physicists' search for a natural science 'theory of everything'. This theory would position organization as Man's primary instrument for creating value, for achieving both individual and social objectives, and so for shaping society, and its capital would be a measure of its power to effect this.

Organization theorists face less ambitious task, which takes us back to Barnard's model. That called on the executives to synthesize what was known in the dimensions of three sub-systems into the 'organizational system'. The outcome fits with the above definition of organizational capital, suggesting it is what the managers create through their explorations of the bounded physical, social and psychological aspects of the organization and the process of integrating what they find into a coherent actionable model. It is also a statement of the organization's options available futures, given both the executives' bounded rationality and the organization's finite resources. A rather similar approach underpins Penrose's theory of the growth of the firm, encapsulated in her oft-quoted sentence that the firm's nature and options are less to do with its resources than with the services they provide (Penrose, 1995). In her analysis, the 'management team' is responsible for developing that body of situated knowledge than separates the services gained from the resources provided, this difference being a Penrosian definition of the organization's capital.

### **Organizational capital as a workable heuristic**

From this vantage point we can look back at the Balanced Scorecard as an intermediary step in a methodological shift from the search for positivistic or scientific definition of organizational capital towards one grounded in the subjectivity and imagination of the executive team. The difference between these approaches grows out of Simon's critique and his suggestion that if the organization's situation and options are ultimately unknowable because of the managers' bounded rationality, then a more useful

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definition of the organization's capital can only arise from what has been learned from an exploration of its options. Since we know that the term capital demands we focus on what can be transferred from one time/space context to another, we end up with a notion that is contingent on what has been learned remaining relevant in the next time-period or in the next place. Since, under circumstances of bounded rationality, the managers have no comprehensive knowledge of the world, they can never be certain that the organization's capital will remain valuable. The organizational capital is shaped by their expectations of its future value, a matter that neo-classical economists ignore because they presume total knowledge and with this assumption reject the contingencies of both time and space. Thus the notion that the organization's capital is the sum of its assets plus its employees' skills and so forth masks all doubt about its future value under different circumstances, another way of saying that a post-Penrosian definition must recognize the time/space-past in which the management team's knowledge has been acquired together with their expectations of the time/space-future in which it is to be applied.

As we adopt a theory of the organization as something unique and impossible to know completely, the ephemeral and transient creation of a specific group of managers immersed in a specific situation, we move towards an inherently constructivist notion of organizational capital. This shifts our attention away from looking for a positivist definition of the organization's resources, both tangible and intangible, that can be completely known and abstracted from the situation in the manner considered by Dean and Kretschmer. We move instead towards the situated and embedded expression of Bowman and Swart (Bowman & Swart, 2007). While these authors offer no definitive theory of either the organization or its capital, they argue the possibility of organizational capital depends instead on resolving the issues of knowledge ownership, what we might call 'intellectual property rights' issues in the broadest sense. If the employees' skills are available only at their discretion, rather than being at the beck and call of the organization's management, they cannot really be considered as part of the organization's capital and must remain the employees' own human capital. Bowman and Swart show that even if we resolve the substantive issues of discovering and measuring the resources applicable to a particular situation we cannot properly speak of organizational capital without also establishing the organization's ownership of those resources, an issue that stands behind Teece's analysis of appropriating their full value (Teece, 2000b).

A Penrose-style analysis suggests that if we define capital – either 'hard' or 'soft' - as something built up in the past but now made available for application in the future we are in danger of missing its essentially subjective nature. To measure it presumes it can usefully be considered objectively, beyond the particular time and space circumstances in which it is either created or to be applied. In fact this point is application to human and social capital as much as it is to organizational capital. Two different people will clearly extract different value from the same educational inputs. Similarly two different societies will make different use of the same tax revenues. Organizational capital, however defined, must still be

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comprehended and integrated into the organization's processes if it is to contribute to value, and this process must be managed. Management's knowledge mediates any measurable value but escapes the possibility of being valued itself because, as Penrose's analysis shows, it is the point at which the management team's entrepreneurial capability enters the economic system (Romer, 1994). Even at this point in the analysis the capital's ownership remains problematic.

In conclusion, we cannot make sufficient sense of organizational capital if we merely map the notions of human and social capital into the organizational context as if the organization was both an individual writ large and a society writ small. It only makes sense if we see the organization as a mechanism which both separates the organization's capital from what is present individually and socially, and establishes the organization's ownership of what has been separated. Organizational learning, that being managed within the context of the organization's power and practice, is so central here because it seems easier for managers to establish the results as organizational property, an argument that elides the complexities which Bowman and Swart explore. But we can see that whatever we might mean by organizational capital is contingent on several supporting analyses: (a) a theory of the organization in which it is created and applied, and (b) a theory of entrepreneurship as mediating the current stock of capital, which thereby shapes the management team's expectations of the future value of what can be carried from the past. We have much work to do in these areas. The widespread use of the terms human, social and organizational capital is a strong indication that we face an eager audience of practitioners, be they individuals, managers, or public policy-makers.

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