Rethinking the O in Dunning's OLI/Eclectic Paradigm

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Abstract: John Dunning introduced the OLI (Ownership-Location-Internalization) paradigm 37 years ago to explain the origin, level, pattern, and growth of MNEs' offshore activities. Over the years, OLI has developed into perhaps the dominant paradigm in international business (IB) studies. However, the costs of being a paradigm are reflected in Dunning's efforts to include an ever-expanding array of IB theories and phenomena under the OLI "big tent." In this paper, we focus specifically on the O in the OLI paradigm, tracing the history of Dunning's ownership advantages. We argue that the modifications of O advantages over the past 37 years, as Dunning attempted to bring all IB phenomena and IB-related theories under the OLI "big tent," has had mixed results. However, we continue to believe that the typology of ownership advantages retains its relevance for IB scholars; that O advantages cannot and should not be subsumed within internalization advantages; and that O advantages are necessary for explaining the existence and success of the MNE as an organizational form.

Keywords: OLI paradigm, eclectic paradigm, John Dunning, ownership advantages, internalization theory.

Introduction

The OLI or eclectic paradigm was developed by John H. Dunning over more than 35 years of thinking and writing about the multinational enterprise (MNE). His views changed over the years in response to changes in the global economy, as well as to criticisms from other IB scholars.

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Acknowledgements: This paper builds on Eden (2003). An earlier version was presented at the Second Reading IB Conference, University of Reading, UK, on March 30, 2009, in a panel on Dunning's ownership advantages. We thank Alan Rugman and the conference participants for their helpful comments.

In particular, Dunning continued to have a long-running debate with internalization scholars (e.g., Peter Buckley, Mark Casson, Alan Rugman) as to whether the OLI paradigm or internalization theory should be seen as "the" core theory of international business. That debate continues today (see Rugman in this volume).[1] Over the years, in Dunning's work, OLI morphed from a theory to a paradigm and grew broader as Dunning continued to include more and more phenomena under the OLI "big tent."

In this paper, we trace the history of Dunning's views of the O in OLI. We argue that Dunning, because he saw the OLI as a paradigm, was forced to continually revise his framework so as to include an ever larger and more diverse array of factors that could (and did) influence MNE activity. As a result, the O advantages (and the same is likely true for I and L advantages; see Eden [2003]) changed several times over the past 37 years and, in so doing, diminished for many scholars the attractiveness of the framework. In an attempt to be "everything to all scholars," the OLI paradigm may have created confusion and, as a result, partly marginalized itself among IB scholars. With five different versions of O advantages to choose from, some scholars now prefer earlier, simpler versions (e.g., Narula 2010); while others will follow the current, most complex version (e.g., Cantwell, Dunning, and Lundan 2010). Regardless of one's preferred definition and categorization of O advantages, in our view, Dunning's typology of O, L, and I advantages still retains its relevance for IB scholars, and the O advantages should not be subsumed within I and L advantages.

The OLI Paradigm

The fundamental puzzle that triggered John Dunning's first publication on the OLI paradigm (Dunning 1973) was the question: Why do firms invest overseas, or more generally, what determines the amount and composition of international production? From the beginning, the OLI or eclectic paradigm was preoccupied with explaining the origin, level, pattern, and growth of firms' offshore activities. Today, we see these questions as "macro" in nature – focusing on why firms invest abroad rather than investing at home, and on explaining the pattern of foreign direct investment (FDI) across countries.

Dunning (1973) reviewed literatures from several disciplines (e.g., economics, geography, finance), trying to determine what social scientists knew about these questions. He proposed that scholars should shift their question from "Why do we see international production?" to documenting and explaining the growth rate and the geographic and industrial patterns of MNEs. He also recommended that researchers focus on the distinctiveness of MNEs and their forms of market penetration, by country and industry. In effect, Dunning urged us to behave as social scientists, documenting the phenomenon of international production and using this documentation inductively to develop better theories about the MNE and its activities.

Dunning (1977) was the first publication to fully outline his views on the ownership advantages of the MNE.[2] Dunning argued, building on Hymer (1960), that firms faced costs of doing business abroad and needed advantages to overcome these costs in order to justify investments abroad rather than at home. Three conditions were needed to justify outward FDI, and therefore the existence of the MNE:

1. The firm must possess net ownership advantages over firms from other countries in serving a particular national market (O advantage).
2. It must be more beneficial for the firm to use these net ownership advantages itself rather than sell or lease them (I advantage).
3. These net ownership advantages must more profitably be exploited when used with factor inputs outside the home country and in the host country (L advantage).

All three advantages (O, I, and L) were needed to generate outward bound FDI and therefore MNEs. A careful read of the three conditions shows that these are all at the level of the firm: (1) the firm must possess O advantages; (2) the firm must choose to use these O advantages itself (through the "hierarchy") rather than sell or lease them (the "market"); and (3) the firm must need factors located outside the home country to make profitable use of these O advantages. One can visualize the firm's decision makers (who we now refer to as the "top management team") - in Dunning's 1977 model - focusing on identifying the firm's O advantages, and thinking about how to maximize the rents that could be derived from these O advantages. More than 30 years later, Verbeke and Yuan (2010) identify managers' recombination capability as the highest-order O advantage, which determines the extent to which ownership advantages are transferrable across MNE operations. Should the firm use the O advantages itself, or would it be more profitable to sell or lease them? What complementary factors would be needed to get the best out of these resources, and if they were not available at home, where would the firm need to go to find them?

It was never Dunning's intention, however, to view OLI as a theory of the firm; rather, the OLI paradigm was primarily designed to be an explanation for international production at the macro (country) level. Dunning (2002b, 40) clearly says that:

> Although I have sometimes illustrated the eclectic paradigm by reference to the individual firm, my main focus of interest is in explaining the international production of all firms from a particular country or group of countries. Because of this, I contend that it is inappropriate to compare the merits and demerits of the eclectic paradigm with that of internalization and other theories of the firm.

Key to the decision making process in Dunning's view were O advantages, which he saw as the answer to the "why?" question behind the process of international production; that is,"Why engage in international production, given the extra costs of doing business abroad?" Dunning's answer was that O advantages gave MNEs a net competitive advantage over local firms in the host country, enabling them to overcome the costs of doing business abroad and to be successful.

However, as we show below, what exactly these O advantages are (and are not) has changed markedly over the past 37 years as Dunning's own views shifted in response to changes in the global economy and in IB scholarship. We argue there have been five different versions of O advantages, with clearly identifiable differences among them. These are shown in Table 1.

Table 1: The Five Phases of Ownership Advantages in OLI

Mark I	Explaining International Production (O)
Mark II	Addressing Internalization Theory (Oa & Ot)
Mark III	Incorporating New Forms of International Business
Mark IV	Recognizing Strategic Management Theory
Mark V	Integrating Institutional Theory (Oi)

Mark I: The First Challenge – Explaining International Production

Dunning (1977) – let us call this "OLI Mark I" - provides the best-known statement of his original view of O advantages. In Mark I, there are three types of ownership or firm-specific advantages (FSAs). He argued that Type 1 advantages were potentially available to all firms in the same location, but that Type 2 and 3 advantages came from being part of a multinational group rather than a *de novo* enterprise (Dunning 1981, 27). The three types are:

- Type 1: advantages that do **not** arise from multinationality but are advantages that any firm may have over another producing in the same location; i.e., advantages stemming from size, monopoly power, and better resource capability and usage. These enable the firm to achieve more technical or cost efficiency or more market power than another firm.[3]
- Type 2: advantages from being part of a multi-plant enterprise, such as economies of scale in non-production overheads (e.g., centralized accounting) and access to internal resources at lower cost than on the external market (e.g., internal borrowing).
- Type 3: advantages that come specifically from multinationality, such as wider opportunities and the ability to exploit differences in factor endowments and markets across countries; such advantages increase along with the number of foreign countries in which the MNE has operations and the diversity of their economic environments.

Our view of Mark I - as published originally by Dunning - is slightly different than reported in Dunning (1981). His 1977 types of O advantages break conceptually into three distinct, layered categories: firm-specific advantages that derive from (1) a single plant/single country, (2) multiple plants, and (3) multiple countries. Since multi-plant firms can easily be wholly domestic,[4] only the third O advantage is uniquely related to multinationality in the sense of being able to take advantage of "multiple sources of external authority and multiple denominations of value" (Sundaram and Black 1992, 729). Thus, in Dunning's early work, the first two O advantages can be seen as answers to the "why?" question as the firm becomes a *de novo* MNE making its first steps abroad. Then, over time, as the breadth and depth of the firm's multinationality grows, the third form of O advantage is created as the MNE learns to manage and exploit these differences and diversities.[5] These O advantages, either created by the firm or purchased, generated proprietary rights of use (e.g., brand names, trademarks) on which the firm could earn rents (Dunning 1980). Dunning recognized that the firm's O advantages were largely derived from the home country's locational (L) advantages (also known as country-specific advantages, or CSAs), which are in turn contingent on the home country's factor endowments, institutions, and government policies. However derived or acquired, the key for Dunning was that these O advantages could be transferred at minimal or zero cost across borders and therefore could be used by the firm to generate profits from value-adding activities located in other countries. Thus, a key characteristic of O advantages was that they had to be mobile (or, to use Rugman and Verbeke's terminology, they had to be non-location bound). As Dunning (1980, 10) says:

> The essential feature about these second types of inputs is that, although their origin may be linked to location-specific endowments, their use is not so confined. The ability of enterprises to acquire ownership endowments is clearly not unrelated to the endowment specific to the countries in which they operate – and particularly to their country of origin…. But, whatever the significance of the country of origin of such inputs, they are worth separating from those which are location-specific, because the enterprise possessing them can exploit them wherever it wishes, usually at a minimal transfer cost.

Mark II: The Second Challenge - Internalization Theory

Dunning's eclectic theory did not meet with universal acceptance by IB scholars. The strongest criticisms came from the proponents of internalization theory (e.g., Buckley 1981, 1983; Rugman 1981) who argued that market imperfections in international intermediate product markets were both necessary and sufficient to explain the existence of MNEs. If Dunning's O advantages were neither necessary nor sufficient to explaining the existence of MNEs, then internalization theory would be seen as *the* theory of the multinational enterprise.[6]

Dunning (1980) saw market failure as having two origins: structural or cognitive. Structural market imperfections arose when there were barriers to competition, transaction costs were high, or the economies of interdependent activities could not be fully captured by the market. Cognitive market failures arose whenever information about products was not easily available or was too costly to acquire (e.g., the pricing of knowledge). Government policies could also generate (or reduce) structural and cognitive imperfections. For example, patents reduced cognitive imperfections (by discouraging information impactedness) but also offered firms the ability to create structural market imperfections should they exercise monopoly power. Firms therefore had an incentive to internalize activities either (a) to avoid the disadvantages of market failure in external mechanisms (market or government) for allocating resources, or (b) to take advantage of these market imperfections.

In response to the criticisms of internalization theorists, Dunning made the first of several accommodations to his critics. First, Dunning (1983) reorganized O advantages into two groups: Type 1 advantages were relabeled as "Oa (asset) advantages," and types 2 and 3 were grouped together and relabeled as"Ot (transactional) advantages." This was a direct attempt to incorporate transaction costs into O advantages. Dunning (2000b, 134) later explained the link between internalization and the Ot advantages as follows:

> I accept that some O-specific advantages are directly the result of firms internalizing the market for their intermediate products across national borders. However, since this very act of internalization puts the internalizing firms at an advantage relative to non-internalizing firms, I think it appropriate to refer to this benefit as an advantage and to internalization as the modality by which this advantage is realized.

Dunning and Rugman's (1985) article on Hymer's contribution to the theory of FDI was clearly a pivotal piece here. The authors argued that Hymer saw all O advantages as monopolistic advantages, deriving from the firm's ability to erect Bain-like "asset power advantages," creating or taking advantage of structural market imperfections to generate barriers to entry and rents for the MNE. Examples of such O advantages included "scale economies, knowledge advantages, distribution networks, product diversification, and credit advantages" (Dunning and Rugman 1985, 229). Closing markets and exerting monopoly power, à la Bain, would imply that the MNE's O advantages were welfare reducing; the authors argued that Hymer did view O advantages as primarily derived from asset power and therefore welfare reducing. Yet if the MNE organized an internal market in response to a cognitive market imperfection, such Ot advantages could be seen as welfare enhancing.

However, the criticisms continued (e.g., Buckley and Casson 1985; Casson 1987). In response, Dunning (1988a, 25) again clarified the MNEs' two types of firm-specific advantages as Oa ("exclusive possession and use of certain kinds of income-generating assets") and Ot ("their ability to co-ordinate separate value-added activities across national boundaries; and their capacity to reduce environmental and foreign exchange risks").

In a section entitled "Criticisms of the Eclectic Paradigm," Dunning asked, "Are competitive or ownership advantages necessary to explain international production?" (1988a, 42). He answered yes, arguing O advantages were necessary for explaining the rise and success of MNEs. To differentiate between O and I advantages, Dunning used the concepts of capability and willingness of MNEs to internalize markets, arguing that O advantages provided the firm with the capability to internalize markets, whereas I advantages provided the firm with the motivation or willingness to internalize markets. Both capability and motivation were required to generate international production.

Mark III: The Third Challenge – New Forms of International Business
At least two major shifts occurred in the global economy in the late 1980s and early 1990s that caused Dunning to revise his categorization of O advantages: the growth in international strategic alliances (including joint ventures) and the creation and expansion of the Internet.

Alliance Capitalism
The early to mid-1980s saw a shift away from traditional, wholly owned entry modes to intermediate modes of entry, such as equity joint ventures, subcontracting, and R&D alliances. Partly this was due to the rise of non-traditional MNEs from developing countries, especially in East Asia, which were smaller and more inclined to use joint ventures than OECD firms. Other important causes were the growing importance of information technologies in production; the fall in trade and investment barriers due to liberalization and deregulation of markets, especially in transition economies after the fall of the Berlin wall in 1989; and the rapid growth in the number of preferential trading arrangements. Dunning first recognized these shifts in Dunning (1984) and Chapter 13 of Dunning (1988a), where he dealt explicitly with non-equity forms of "international involvement" and their implications for OLI.

Dunning (1995), in "Reappraising the Eclectic Paradigm in the Age of Alliance Capitalism," separated old-style, hierarchical capitalism from new-style, alliance capitalism and compared their O, L, and I advantages. He argued that hierarchical capitalism was akin to an "exit" strategy, in which firms replace the external market with the internal hierarchy, whereas alliance capitalism was similar to a "voice" strategy, because firms adopt cooperative solutions within the market.

It was in Dunning (1995) where he first argued that firms could go abroad to acquire O advantages as well as to exploit O advantages, in effect identifying both acquisition and exploitation as motivations for FDI. He saw the MNE as an organizer of a collection of created assets, some generated internally and others accessed through alliances with other firms. Seeing the firm as a collection of asset bundles implied that O advantages could consist not only of internally generated assets but also of the firm's "competence to seek out, harness and influence the innovation, price and quality of assets of other institutions with which they have an on-going cooperative relationship" (Dunning 2002a, 38). While Dunning saw asset-seeking FDI as adding a "new dimension to our thinking about the rationale for FDI" and one that required "a reconfiguration of traditional OLI variables" (Dunning 2002a, 37), he argued that "the essential propositions of the eclectic paradigm still remain intact and valid." Dunning (2002a, 27) summarized this as:

> I still prefer to think of O advantages as any kind of income-generating asset that allow firms to engage in foreign production, I readily acknowledge that these may arise as a direct consequence of cross-border market-replacing activities. But, even where this is the case, I believe that a firm's ability to benefit from such activities must be related to the assets which it possesses prior to the act of internalisation.

The Internet and E-Business

Another paradigm-shifting change in the global economy was the creation of the Internet and the rise of e-business. Dunning and Wymbs (2001) saw e-business as changing the context and scope of the O advantages of firms. Although the authors asserted that "the basic tenets and predictions of the OLI paradigm … appear to hold with respect to the Internet," they argued that O advantages changed in an e-business world.

First, Oa advantages enabling both speed and stealth in firm action were indispensible in an e-business setting, specifically, "intangibles as specialization, speed, and the ability to harness and deploy critical assets" (Dunning and Wymbs 2001, 280). Technology (e.g., Cisco Systems Internet switches), standards (e.g., Microsoft's operating system), and preferred customer interfaces (e.g., Amazon.com) were examples of Oa advantages of some MNEs.

Second, Ot advantages relating to "the ability of firms to learn the business of electronic commerce, and how its various components can be replicated and/or coordinated in diverse industries" were increasingly important (Dunning and Wymbs 2001, 277). For instance, E-commerce experience in horizontal alliances and vertical alliances was considered an Ot advantage, as were networking and collaboration skills demonstrating "the ability to work efficiently and harmoniously with other enterprises, e.g. competitors, suppliers and customers, to innovate enterprises more productively or speedily, and/or more effectively utilize existing production and marketing opportunities" (Dunning and Wymbs 2001, 277).

Dunning and Wymbs argued that the O advantages should be more salient in the e-commerce context than in traditional markets. "[T]he Internet… reduces the importance of the physical location of any particular value activity, and blurs the corporate lines between competitors, co-providers, and strategic partners for any particular service" (2001, 280), which in effect erodes the importance of the L and I advantages. Finally, the last distinguishing feature of O advantages in e-commerce, they argued, was an emphasis on access rather than ownership, since in cyberspace firms are more likely to use the market to access resources and capabilities rather than to extend their ownership of these same resources and capabilities.

Summarizing OLI at the Millennium

Dunning (2003), "The eclectic (OLI) paradigm of international production: Past, present and beyond," provided perhaps the most complete statement of his views on the OLI paradigm at the turn of the century. He claimed that the arguments generating the O, L, and I trio were still in place, and again stated that the purpose of the paradigm was to explain the extent and pattern of international production. Because this statement is so clear (and one of the simplest statements of OLI), we quote it in full below (Dunning 2003, 28):

> Let me now reiterate the propositions of the eclectic paradigm. The subject to be explained is the extent and pattern of international production, i.e. production financed by FDI and undertaken by MNCs. The paradigm avers that, at any given moment of time, this will be determined by the configuration of three sets of forces:
>
> 1. The (net) competitive advantages which firms of one nationality possess over those of another nationality in supplying any particular market or set of markets. These advantages may arise either from the firm's privileged ownership of, or access to, a set of income-generating assets, or from their ability to coordinate these assets with other assets across national boundaries in a way that benefits them relative to their competitors, or potential competitors;
> 2. the extent to which firms perceive it to be in their best interests to internalise the markets for the generation and/or the use of these assets, and by so doing add value to them;
> 3. the extent to which firms choose to locate these value-adding activities outside their national boundaries.

This summary of OLI is basically the Mark II version of the paradigm (Eden 2003), where O advantages are two-fold: Oa (privileged ownership or access to income-generating assets) and Ot (advantages from coordinating these assets across countries).

Mark IV: The Fourth Challenge – Strategic Management Theory

Dunning and many of the key internalization theorists were British/European scholars. If there was a geographic heart at the center of the OLI paradigm, it was the University of Reading's Economics Department in

Reading, England. In 1987, however, Dunning moved to the United States to head up the PhD program in International Business at Rutgers University, and began traveling back and forth between the USA and England. The move to Rutgers brought Dunning into much closer contact with the rapidly growing Departments of Management across the United States, and the new emerging field of strategic management.

Strategic management scholars were asking questions and developing theories, drawn from disciplines such as sociology, psychology, and labor relations, which focused on the firm and its performance. While most of the early work dealt with domestic firms, some strategy scholars such as Michael Porter, Sumatra Ghoshal, Christopher Bartlett, and Michael Hitt were developing a new subfield, international strategic management, which linked strategy with international business. Perhaps not surprisingly, Dunning became increasingly preoccupied with expanding the " big tent" of the OLI paradigm to incorporate insights from strategic management.

Dunning's (1988b) restatement of the OLI paradigm recognized that the link between OLI and strategic management could be made through firm-level motivations for international production. The O factors answer the "why" question in terms of general Oa and Ot motivations. However, once one begins to think of MNE activities in terms of the value chain, individual plants, products, and factors, the actual motivation – or *strategy* - behind establishing any particular value-adding activity abroad becomes important. Thus, focusing on motivations at the individual activity or investment level could be a link between OLI and strategy.

The big leap in redefining O advantages came when Dunning clarified his four-fold categorization of motivations for FDI. Dunning (1988b, 13) provided perhaps the first "cut" at these motivations, where he outlined "three main forms of international production": market seeking (import substituting), resource seeking (supply oriented), and efficiency seeking (rationalized investment). A fourth category – strategic asset-seeking FDI – was added in Dunning (1991). The fourth category was an attempt to broaden the "big tent" to encompass knowledge-based strategic alliances, which were clearly being motivated by firms allying with other firms to access strategic assets they did not own themselves. Chapter 3 of Dunning's major opus, *Multinational Enterprises and the Global Economy* (1993) identified four basic types of international production: natural resource seekers, market seekers, efficiency seekers, and strategic asset or capability seekers.[7]

Recognizing that the eclectic paradigm needed to encompass the growing importance of knowledge-based FDI, Dunning (1993) again broadened the OLI paradigm. He attempted to add strategy as a fourth component of the OLI paradigm, by creating OLIS (where S included 10 topics such as technology, sourcing, HRM, marketing). This attempt has been generally regarded as fruitless (Eden 2003) and was abandoned in later versions of the paradigm.

Dunning (1993) was perhaps the first publication where he addressed the tension between asset exploitation and asset seeking within the motivations for international production. In Mark I and Mark II, firms went abroad to earn rents on their O advantages; in Mark III and IV, the firm also goes abroad to seek or acquire these advantages. While the <u>motivations</u> for FDI (the "why") were still seen as exploitation of the firm's O advantages, the <u>purpose</u> of the actual investment was now defined as seeking or acquiring either products (market-seeking FDI) or factors (resource-, efficiency- and strategic asset- seeking FDI). Calling O advantages "competitive advantages" and recognizing that the competitiveness comparisons must be made <u>not</u> just between the MNE and domestic firms in the host country, but also in comparison with other foreign MNEs in the same host country, are also signals that Dunning's own views were broadening to incorporate insights from strategic management scholars.

Another attempt to incorporate the resource based view (Barney 1991) and the evolutionary theory of the MNE (Kogut and Zander 1993) was to shift from a focus on exploiting O <u>advantages</u> to managing O <u>assets.</u> Dunning (1999) argued that the resource-based view and evolutionary theories of the firm were close relatives to the O in the OLI paradigm; but the strategic management theories took as their focus the creation and upgrading of these advantages, whereas the eclectic paradigm focused on their exploitation. Dunning (2000a) extended the comparison to static versus dynamic O advantages, arguing that marketing-seeking and resource-seeking FDI were primarily about exploiting existing O advantages and therefore static in nature; whereas efficiency-seeking and strategic asset-seeking FDI were more dynamic, with the latter specifically linked to knowledge exploration.

Dunning (2000a, 168-169), in "The Eclectic Paradigm as an Envelope for Economic and Business Theories of MNE Activity," makes perhaps the clearest statement of O advantages incorporating these insights, and therefore worth quoting in full (emphasis added):

1. Those relating to the possession and exploitation of monopoly power, as initially identified by Bain (1956) and Hymer (1960) — and the industrial organization (IO) scholars (e.g. Caves 1971, 1982; Porter 1980, 1985). These advantages are presumed to stem from, or create, some kind of barrier to entry to final product markets by firms not possessing them.
2. Those relating to the possession of a bundle of scarce, unique and sustainable resources and capabilities, which essentially reflect the superior technical efficiency of a particular firm relative to those of its competitors. These advantages are presumed to stem from, or create, some kind of barrier to entry to factor, or intermediate, product markets by firms not possessing them. Their identification and evaluation has been one of the main contributions of the resource based and evolutionary theories of the firm.
3. Those relating to the competencies of the managers of firms to identify, evaluate and harness resources and capabilities from throughout the world, and to coordinate these with the existing resources and capabilities under their jurisdiction in a way which best advances the long term interests of the firm. These advantages, which are closely related to those set out in (2) are especially stressed by organizational scholars, such as Prahalad and Doz (1987), Doz, Asakawa, Santos and Williamson (1997) and Bartlett and Ghoshal (1989, 1993). They tend to be management, rather than firm, specific in the sense that, even within the same corporation, the intellectual et al., competencies of the main decision takers may vary widely.

These three O advantages could perhaps be grouped into the Mark II categories, as Oa (exploitation of monopoly power, and the possession of assets and resources that generate superior rents) and Ot (advantages of multinationality), although Dunning does not do this in the paper. In fact, there is no mention of Oa or Ot, except in the historical summaries of prior literature in Tables 1 and 2, where Dunning distinguishes between static and dynamic O advantages.

More recently, Dunning (2002a) again broadened O advantages to include relational assets, building on recent work in strategic management on social and relational capital. He split O advantages into tangible and intangible assets, intangible assets into intellectual and relational assets, and relational assets into private and social assets. Relational assets were defined as facilitating assets that had to be used jointly with the relational assets of another actor. Like other O advantages that could be exploited or sought, relational assets could be internally or externally generated and were likely to be context specific. Here the influence of strategic management is again apparent. Dunning noted that relational assets, in order to confer a sustainable competitive advantage on the firm(s) deploying them, needed to be scarce, unique, and imperfectly imitable. Dunning concluded by hypothesizing that relational assets were growing in relative importance as a component of O advantages; MNEs were likely to possess a greater stock of these assets than non-MNEs; and that MNEs were increasingly likely to protect or augment their core competences through their access to, and deployment of, foreign located relational assets.

Mark V: The Fifth Challenge - Institutional Theory

The most recent challenge to the OLI paradigm has come from institutional theory, and (to our knowledge) the last revision of the OLI paradigm before Dunning's death in January of 2009 was the attempt by Dunning and Lundan (2008a, 2008b, 2010) to broaden the OLI "big tent" to include institutional theory, building on the work of North (1990, 1994, 2005). A follow-up piece (Cantwell, Dunning, and Lundan 2010) also introduced a co-evolutionary perspective.

In all these papers, the authors argued that institutions provide the rules of the game for the "contemporary network MNE," which they saw as a "coordinator of a global system of value added activities that are controlled and managed" by the MNE (Dunning and Lundan 2008a, 588). Institutional factors influenced both the determinants and outcomes of MNE activity, and thus affected all three components of the OLI paradigm. Their argument for bringing institutions under the "OLI umbrella" stemmed from the conviction that the ways in which MNEs responded to cross-border institutional differences in institutions would be increasingly important for their long-term competitiveness.

Of the three OLI components, Dunning and Lundan saw O advantages as the most difficult to reconcile with institutional theory. To solve this problem, the authors introduced the concept of "institutional ownership advantages (Oi)," which consisted of both formal and informal incentive structures and enforcement mechanisms. Oi was seen as separate and distinct from Oa and Ot advantages, so that there was now a triumvirate of O: Oa + Ot + Oi.

Oi advantages were seen as the institutional infrastructure, specific to a particular firm, which the authors broadly categorized as "a galaxy of internally generated and externally imposed incentives, regulations and norms, each of which may affect all areas of managerial decision-taking, the attitudes and behavior of the firm's stakeholders, and of how each of these relates to the goals and aspirations of other economic and political actors in the wealth creating process"(Dunning and Lundan 2008a, 582). Given the unwieldiness of this Oi definition, the shorter and clearer definition in Cantwell, Dunning, and Lundan (2010) is more likely to be quoted by future scholars:

> [I]nstitutional ownership advantages (Oi) …incorporate the firm-specific norms and values guiding decision-making, as well as an imprint of the institutional environment (L attributes) of the home country. Such institutional advantages can be transferred (intentionally or unintentionally) alongside other ownership advantages to host countries, and may influence their institutional development.

One problem created by the addition of a new O advantage is the need to distinguish Oi from Oa and Ot advantages. Some distinctions are readily apparent. Oi advantages, for example, are influenced by shifts in values, perceptions, and behavioral mores, which need not be directly related to the range of products or services offered by the MNE. In addition, while Oa can be enhanced or regenerated by acquisitions or network alliances, a social environment is more difficult or even impossible to isolate, making institutional innovation inherently more complex.

On the other hand, there are similarities between Oa and Oi advantages. Oa and Oi include both intentional transfers of practices and institutions, as well as unintentional leakages to other firms. A huge variety of organizational practices can be seen as including both Oa and Oi advantages, for example, the M-form of organization, environmental and quality management processes, corporate governance standards, and workplace diversity policies. This complexity makes it difficult for scholars to separate the new trio of O advantages. The introduction of Oi has the additional disadvantage of potentially confounding O and L advantages, a criticism made by Rugman (2010, 14):

> …[Dunning] states that O advantages also include home country institutional factors such as the cultural and legal environment and also tangible assets such as labor and natural resources. Obviously such institutional and tangible assets should not be defined as O advantages but as L advantages.

Our own view is that Rugman is wrong here in his recommendation that O should be abandoned. Dunning saw O, L, and I advantages as designed to answer different questions about international production. O explained *why* firms engaged in international production; L explained *where* they went; and I, *how* they organized their international activities. While O can be carved up and placed within I and L, this would violate the Tinbergen rule that the number of tools should be at least as large as the number of targets (Tinbergen 1952). Two tools (I and L) would therefore have to handle three targets (why, where, and how). Conceptually, it is easier and cleaner to match each question with its own component in the eclectic paradigm. Of course, just matching the number of tools with targets is insufficient as each tool must be effective and distinct. Moreover, consistency requires that tools and targets are mutually independent, and internalization theorists have argued elsewhere that O fails on these grounds (Itaki 1991). Still, we remain "battered but unbowed," committed to a three-fold OLI paradigm where O stands alone as a core attribute explaining international production.

And here the story stops. In January 2009, John H. Dunning passed away after a long and valiant battle with cancer. Now, 37 years after his first publication on the OLI paradigm, we as international business scholars have the opportunity and calling to evaluate Dunning's impact on IB scholarship.

Conclusions

In this paper, we have traced the evolution of the O in Dunning's OLI paradigm. Some IB scholars may find the details of this history tedious; others may see errors and omissions. This paper has, we hope, made a small contribution by examining the historical progress of Dunning's conceptualization of ownership advantages, but we do recognize that "the devil lies in the details."

We argued that Dunning started with a simple, easy to understand, layered view of ownership advantages, which we have called Mark I: single-plant/multi-plant/multi-country. Because he sought to explain international production, this trio of O advantages is geography based: one plant location, multiple plant locations, and finally locations in multiple countries. The O trio also has apparent close ties to manufacturing and natural resource industries, although Dunning argued that the trio also applied to service industries, and is also useful for separating *de novo* from mature MNEs.

In response to criticisms from internalization theorists, Dunning reorganized the O advantages as Mark II. The first category is relabeled as asset-based advantages (Oa); and the second and third categories grouped together as transactional advantages (Ot). Oa came from ownership or access to income-generating assets; Ot from the MNE's ability to coordinate these assets with other assets across national boundaries in ways that created competitive advantage.

Despite broadening the "big tent" to incorporate major changes in international business over the past 20 years and accommodate the rise of strategic management theory in Mark III and Mark IV, Dunning continued to argue that Oa and Ot were the two categories of O advantages. It was only with the challenge of institutional theory that Dunning made a major revision in Mark V by adding Oi, institutional advantages, as a third O factor. Oi advantages came from firm-specific norms and values, and the imprint of the home country institutional environment on the firm.

Stretching the "big tent" so that OLI can be the "reigning paradigm" has both benefits and costs. The understanding of what O, L, and I actually are and do or do not include can become increasingly problematic. Moreover, Dunning's O advantages have received long-standing criticism from internalization theorists, from 30 years ago (Rugman 1980) up to the present (Rugman 2010), arguing that O should be abandoned as a separate category in the eclectic paradigm.

Even if one believes that O should be a separate category, as we do here, one can still lament the "large and ever-growing lists of categories and sub-categories, sub-paradigms and extensions, because these lists have the potential to be so interminably long if they are exhaustive, and therefore [become] ultimately tautological" (Narula 2010, 41). Individuals who use Dunning's OLI paradigm as a framework for their research may use completely different versions, increasing the confusion. Like Narula (2010), we wish for the simplicity of a "coat hanger" rather than the "Swiss Army knife" the OLI paradigm has become.

Where do we go from here? Will IB scholars simply drop the OLI paradigm and adopt internalization theory *sans O*? Will internalization theory become the "reigning paradigm" now that John Dunning is no longer with us to argue that internalization theory is incomplete without O advantages? Will the OLI paradigm fragment into multiple versions as IB scholars pick the one that best suits their needs, as Narula (2010) recommends? As new changes occur in international business and new theories become fashionable, has the "big tent" finished its growth? These questions are likely to stimulate discussions for many years. We look forward to those debates.

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Endnotes

1 Rugman (2010) argues that the OLI/eclectic paradigm can best be reconciled with internalization theory by abandoning ownership advantages as a separate category in the eclectic paradigm. Instead, Rugman recommends that firm-specific components of O should be incorporated into I, and country-specific components of O into L. If Dunning were still alive, he would have strongly disagreed with Rugman and argued that the O in OLI was alive and well.

2 The years 1975-1977 were clearly particularly rich years in terms of the building blocks for IB theory: Williamson (1975, 1997) on transaction cost economics, Buckley and Casson (1976) on internalization theory of the MNE, and Dunning (1977) on the OLI model.

3 In other words, O advantages must either raise the firm's revenues and/or lower its costs, relative to domestic firms, by enough to overcome the costs of doing business abroad, ceteris paribus.

4 For example, Wikipedia reports that Ford Motor Company has 27 open and 20 closed plants in the United States. (http://en.wikipedia.org/wiki/List_of_Ford_factories#Current_Production_Facilities, accessed on March 7, 2010).

5 This typology is reminiscent of Caves' (1996, 1) definition of the MNE as "an enterprise that controls and manages production establishments – plants - located in at least two countries," that is, as "one subspecies of multiplant firm."

6 Rugman is still making this point today, 30 years later.

7 Dunning (1993) discusses other motivations for FDI such as escape, support and passive investments, but these appear to have been later dropped. Possibly, Dunning saw these other motivations as minor relative to the "big four" and therefore ignored them in subsequent work. In the OLI paradigm, the key verbs used to describe FDI motivations, starting with the Mark III version, were exploit and acquire; other verbs such as arbitrage and avoid are now seldom heard although they appear in Dunning (1993).