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Practical Wisdom for Sustainable Management and Knowledge Sharing

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Abstract: Practical wisdom ("phronēsis") is an Aristotelian concept that has been incorporated into management research to a considerable extent in the last 20–30 years. This paper attempts to show how practical wisdom is necessary as a type of situational knowledge that is required for most management decisions to be sustainable. We start reviewing the types of knowledge necessary in decision-making, and we emphasize "practical wisdom" as the kind of knowledge that is particular and subjective, is acquired through practice, and is transmitted by example. We relate the concept of practical wisdom with the Hayek concept of knowledge of time and place, the Polanyi concept of tacit knowledge, and Nonaka's knowledge management. We conclude that in most management decisions, phronēsis is required and, thus, is necessary to increase sustainability in terms of effectively sharing knowledge and acquiring virtues to improve managerial decision-making. Not considering phronēsis has bad implications for management as it can lead to unsustainable and poor decisions, for instance, in main areas of management control such as pricing policies, budgeting, balanced scorecards, transfer pricing, and goal setting. Along with the intellectual virtue of practical wisdom we conclude that moral virtues, specifically justice, should be the complement that guides organizational objectives.

Keywords: practical wisdom; management control systems; decision-making; performance evaluation; sustainable management

1. Introduction

Practical wisdom or "phronēsis" (the original Greek word) is an Aristotelian concept that has been incorporated into management research to a considerable extent in the last two or three decades. While at some time it may have been considered "the forgotten virtue," it is not anymore [1]. Phronēsis has been studied in the field of strategy [2], in organizations [3], in learning [4]; on a more general perspective [5], on a perspective of management education [6], and even from a practical point of view as the cornerstone of a possible new management "renaissance" [7].

Management is an area that seems to be particularly appropriate to apply phronēsis. Yet, there has been very little research on phronēsis applied to management and to consider it jointly with knowledge management as part of sustainable management practices. In specific fields of management, some studies consider practical wisdom as crucial in decision-making [8] —particularly in some auditing or forensic accounting practices [9–11]. Also, in a different direction, there have been some analyses in management journals that have proposed phronēsis as the basis of a "phronetic" science [12,13], partly based on Flybjerg [14].

In contrast, what we intend to do in this paper is to take a somewhat different approach, perfectly coherent with the original Aristotelian formulation, to show how, in management, the conventional (or

scientific) wisdom is very seldom sufficient for good decision-making and that phronēsis is an absolute requirement for that purpose. Our emphasis is in putting this into practice, i.e., showing to what type of knowledge we refer when we speak of phronesis. For this purpose, we illustrate it with examples from the management control field, where a quantitative analysis is needed but is by no means enough. In the Aristotelian view, "practical wisdom also is identified especially with that form of it which is concerned with a man himself—with the individual (. . .); of the other kinds one is called household management, another legislation, the third politics, and of the latter one part is called deliberative and the other judicial. Now knowing what is good for oneself will be one kind of knowledge, but it is very different from the other kinds" [15] (1141b, p. 29).

We will proceed as follows. First, we will review two essentially antagonistic approaches to management that coexist nowadays and show how we want to take a different approach where phronēsis is an essential element for sustainable management practices [16,17]. Next, we will review the decision-making process, to show that in complex, non-operational decisions, there is always some kind of "experiential information" which prevents us from finding a merely technical solution to the decision problem, especially if we want to build and share knowledge in organizations, that is particularly important in social sustainable management [16]. We then go back to Aristotle's analysis of different types of knowledge, to show how the Aristotelian concept of phronēsis fits in the decision-making process, and particularly allows to improve management virtues which are seen as crucial in sustainable managerial decision-making processes [17].

We next show how different approaches and types of analysis are in fact related and pointing to the same issues, namely those of Aristotle, Hayek, Polanyi, and Nonaka. All of them have to do with the knowledge that is not quantifiable or even explicit but is indispensable for decision-making. We conclude that these views have common ideas that allow us to conclude that practical wisdom is unavoidable to enter into virtuous cycles and sustainable management.

We try to visualize how phronēsis is needed in some situations that begin with a quantitative analysis but need a considerable amount of deliberation to make the decision effective and sustainable. Specifically, we discuss pricing decisions and pricing policies, management performance evaluation, and goal setting. These are repetitive situations where sustainability through time is indispensable. We provide some real-world examples that we believe help to understand the arguments expressed before. Finally, we discuss how the virtuous cycle is created in management when practical wisdom is incorporated, leading to improving sustainable management practices. We conclude that complementing practical wisdom with moral virtues, mainly justice, complements sustainable management and reinforces the ethical managerial approach for sustainable organizations.

2. Different Concepts of Management

Managing organizations is a very complex endeavor. Independently of whether organizations are public or private, whether they are large or small, managing people is a complex activity, both from the point of view of obtaining specific results and of looking at the evolution of the relationships between the people involved in them. One of the main reasons for this is that, in management, people "learn," i.e., they change their knowledge, abilities, and attitudes anytime a decision is made. These changes often affect the character of the organization, at least in the long-run, but often also in the short-run. Recently, the new demands on managing require strategies that must incorporate being sustainable, in the three dimensions—economic, social, and environmental—that would need to include aspects of knowledge management and ethics [16,17].

Management and management theory have evolved a lot during the last half a century or so. Conventionally, it started at the beginning of the 20th century, and its founding father was Frederick Taylor. It was from that period on that the word "management" started to be widely diffused, being one of the great successes of the 20th century. Indices of this success are the number of books published, the number of business schools or schools of management, the number of students, the number of

programs of executive education, and so on. All of them have increased greatly in the last third of that century.

As often happens in the social sciences, this success has not followed a simple path. In fact, there have been many different approaches. In the 50s and 60s of the last century, the standard of management was Peter Drucker. More specifically, his *The Practice of Management* was, according to himself in the 1985 foreword to it, the first real management book to be published, in the sense of encompassing all aspects of it. His management had a strong humanistic basis, which is something that was informally declared by himself on many occasions (see for instance https://www.youtube.com/watch?v=W1g_tE3VLKk).

Yet, at the same time, Drucker was emphasizing that some level of immediate effectiveness (i.e., profit) was absolutely necessary [18]. This translated into a reasonable profit, beyond a minimum level, as well as other quantifiable variables that are indispensable for the continuity of the firm; but putting those profits in the context where they should be, which is never in the central place of the organization or the company. The objective of a firm, according to Drucker, should be "the creation of a consumer," which incorporates by itself a long-term point of view.

But if for many years Drucker's was the standard of management, today there is no consensus view. There are several approaches to management and management theory. Two of them may be considered as extremes, incompatible with each other, and on top of that, their defenders seldom engage in dialogue to try to find an integrative solution.

On one extreme we can find the economistic view, where (closely following the original Taylor practice, but with a somewhat different spirit) what counts (almost exclusively) is the monetary values: Profits (or, more rigorously, firm's value) for shareholders, and incentives for employees [19,20]. Implicitly or explicitly, it is based on the idea that people are only motivated by money and everything is done just "mechanically," i.e., through performance indices or "metrics" that are associated with an automatic monetary reward [21–23]. This approach ignores phronēsis completely: It is an approach to management based only on formalized science and general knowledge based on that.

Some academic papers even put things upside down. Ma and Jing [24] for instance, in a recent paper, examine the possibility of using the mission of the organization and fixed salaries as substitutes for material incentives in not-for-profit organizations to increase organizational efficiency. Only 50 years ago, a paper like this might have been unconceivable: Incentives were either inexistent or a small percentage of most people's salary, because most people did not believe in them as motivators [25,26]. It seemed that the natural thing to do was to do things 'right' as the reason of everybody's job was to do the 'right' thing and contribute to the organizational goals. So, motivation largely consisted of being a good professional, to obtain good results that were seen as useful for someone else, and obtaining in exchange for this a reward in the form of a salary, mainly fixed. Afterwards, of course, they could possibly establish a way to compensate someone for a more intense dedication or for having a superior ability, with some form of (mostly informal) incentive. This is aligned with recent models of social sustainability that consider that drivers for voluntary knowledge sharing (deemed to be one of the basic generators of sustainability) are incentives associated with organizational justice perceived in the organization, meaning that people tend to behave in terms of cooperation and help to increase social sustainability of their organizations when their consider their organizational environment fair [16]. Going back to Ma and Jing, their article is a good example of putting things upside down: We start considering that people work only for incentives and, then, we state that organizations can save money by giving them a fixed salary and a mission they can identify with. The recent literature on the subject is almost exclusively based on the simplistic hypotheses of mathematical models of agency theory, e.g., [27,28]. An "automatic" incentive system based on a formula applied to a metric implicitly implies that all is desired from the employee is some value of the metric that does not consider other non-quantitative aspects that are often important [29]. This would entail ignoring phronēsis, quite obviously.

This approach ignores Drucker as well, mainly (in what concerns this paper) the important point of the mistake that is supposing that "only senior executives make decisions or that only their

decisions matter (. . .) Decisions are made at any level of the organization (. . .) apparently low-level decisions are extremely important in a knowledge based organization," where "knowledge workers are supposed to know more about their areas of specialization than anybody else" [30] (Introduction). In a knowledge organization therefore, some people have (as we will see) some knowledge that, by its nature, requires them to make decisions by themselves that impact the results of the whole organization [30] (p. 171).

On the other end of the spectrum we find "humanistic management", represented by Pirson and colleagues [31] perhaps better than by anyone else. Their research is based on good faith and a humanistic spirit, from noble assumptions in terms of how human beings (entrepreneurs, employees, customers) are and behave. However, sometimes one can doubt whether they are talking about organizations that need to make money and generate profits. In our view, the main problem with their approach has to do with the objectives of the firm, but they do not consider that one of the aspects of sustainable organizations is also economic sustainability, which means having enough results to continue operations. This humanistic view is consistent with the idea that the final objective of a firm is the Aristotelian happiness ("εὐδαιμονία"—eudaimonia). While we agree with that, it is difficult to see what should be done to put these ideas into practice. Thus, in our view, they lack a more 'practical' approach that is needed in management to make realistic and practical recommendations and consider that some level of results is unavoidable.

On the same side, we can find the "positive organizational scholarship" [32], which aspires to create organizations where members " . . . are characterized by trustworthiness, resilience, wisdom, humility, high levels of positive energy. Social relationships and interactions are characterized by compassion, loyalty, honesty, respect, and forgiveness. Significant attention is given to what makes life worth living . . . " [32]. The objection would be similar as to the criticism of humanistic management: While the basic assumptions are very interesting and partly realistic, this approach does not show how it could be put into practice to generate a minimum level of results that guarantee economic sustainability.

Both approaches generally ignore the basic characteristics of the process of decision-making in organizations, the knowledge necessary to make decisions in practice, and the constraints that organizations may represent for human activity. Organizations should be instruments for cooperation between different people; but the competing interests of each party, which often present incompatibilities, may cause that specific ways of organizing become a restriction for some of the parties involved.

We would like to contribute to bridge the gap between the two approaches by reconsidering that sustainable decision-making practices in management require some type of qualitative information (the intellectual virtue of phronēsis) that helps to generate the necessary knowledge that is situational and can be shared amongst people.

3. Decision-Making and the Need of Situational Knowledge

The decision-making process in organizations is far from being a purely mechanical activity. Decisions that we can label as "operational" may exist in theory, and in practice some decisions can be close to "operational," i.e., decisions in which some well-known and established procedure of solution is "known," based most probably in science, which entails that applying a routine or (to use a fashionable word), algorithm, the problem can be solved.

But most of the real-world problems in management are not operational. Therefore, the possibly available algorithms need to be complemented with a personal knowledge and some actions, based on such personal knowledge, which are far from any mechanical solution or pre-established algorithm.

In this respect, technical solutions to a complex, organizational problem are simply inadequate. Of course, this does not mean that techniques are not useful per se: In any organization, there is a part that can be considered technical, in which applying techniques is often necessary. But there is always a part in which it is not possible to do that.

One example that may be helpful to clarify this is the following one. Suppose someone wants to send a spacecraft to the end of the Solar System to observe the outer planets. The calculations to

be done are well known and follow very strictly a scientific discipline. Different "solutions" may be available at the same time; therefore, several options of design can possibly be chosen. But, other than that, the rest of the problem is merely "operational."

In contrast, choosing between the different available design options is not merely operational; and putting them into practice is even less operational than choosing a design option. The reason is, of course, that there is a need for a (rather huge) human structure that must be capable to do that: It is unconceivable that a single human, or even a small number of people could do it. Besides, this human structure must be managed, which is definitely not an operational activity.

Some people are capable of reasonably solving these problems, whereas other people are not. We usually think that we need someone that possesses both the scientific knowledge and "experience," but it may be difficult to be explicit about what this "experience" is about.

4. Knowledge Types: From Aristotle to Nonaka, through Hayek and Polanyi

Actually, the basic concepts to analyze these problems go back to Aristotle and even further. Next, we will attempt a summary review some of these essential concepts and their evolution through history.

4.1. Aristotelian Types of Knowledge

Aristotle distinguished between several types of knowledge (intellectual virtues). To start with, there is science (that is the usual translation of what Aristotle called ἐπιστήμη, or epistêmê). Science may be defined as a system of deductions based on syllogisms and, according to Aristotle, all the things that are always true.

This concept is a heritage from Plato, who distinguished between what is immutable and could not be anything else (ἐπιστήμη—epistêmê) from what is merely an opinion (δόξα—doxa) without logical underpinnings that could give origin to demagogy in the political terrain.

Some concepts and principles are "previous" to such science and, thus, cannot be based on it, because this would mean either a vicious circle or else an infinite regress. These principles, taken directly from the real world constitute what Aristotle called νοῦς (nous) and has been often translated as "intuitive reason" or "intellect." Possibly, calling them just "principles" might better express his basic idea. They are the principles upon which science develops by deduction; and that, together with episteme, constitute the (philosophical) wisdom or sophia (σοφία) [15] (1141a).

Together with these three types of intellectual virtues (science, reason, and wisdom) there are two more that, instead of being permanently true and immovable, are concerned with the things that can be otherwise, depending on the circumstances and specific variables: The art ("τέχνη"—teknê) and the practical wisdom (φρόνησις—phronēsis). "Art" is a word that has to be understood in a general sense that includes the fine arts, but also the crafts (carpenters, bricklayers, shoemakers, etc.) and the ability to do anything that requires a physical or intellectual skill—"skill" being another possible translation of "teknê." "Practical wisdom" is a common translation of phronēsis, although a more traditional one (coming via Latin translations) is "prudence." We wish to avoid this second expression, because it may be thought to have connotations of a moral virtue, and phronēsis in the Aristotelian sense is not: It is definitely an intellectual virtue and, thus, it is considered to be knowledge.

Art (or "skill") is a type of knowledge quite different from the other three we have briefly discussed. Art "is identical with a state of capacity to make, involving true reasoning (. . .) considering how something may come into being which is capable of either being or not being, and whose origin is in the maker and not in the thing made" [15] (1140a). If only because of this reason, it is a mistake to consider management an "art," but there are more reasons that we will comment on later.

"Practical wisdom" is defined by what the practically wise people do: To deliberate about what is good for oneself, "not in some particular respect, e.g., about what sorts of thing conduce to health or to strength, but about what sorts of thing conduce to the good life in general" [15] (1140b). In addition, "we credit men with practical wisdom in some particular respect when they have calculated well with a view to some good end which is one of those that are not the object of any art" (ibid). Therefore,

the man who is capable of deliberating has practical wisdom. Practical wisdom, or phronēsis is a true and reasoned state of capacity to act with regard to the things that are good or bad for man.

Practical wisdom is, then, the complement of (philosophical) wisdom, i.e., it is what goes beyond logical structure and basic principles that cannot be changed and takes into account the contingent and particular circumstances of the real world that are necessary to solve real world problems. Practical wisdom, then, is a form of knowledge that is not systematic or well-structured like the modern concept of science, which would probably be the Aristotelian philosophical wisdom or "sophia" that includes epistêmê, but goes beyond that (i.e., includes "nous"). Practical wisdom is rather what a specific individual knows that has to do with particular circumstances, not with what is permanent in the Aristotelian spirit of epistêmê, but with something that is accidental or can be changed. It is the complement of science that permits rational action. The practically wise person is that person who is able to achieve the end that has to be achieved (and that, as we will see, has to be determined by the moral virtues) by deliberating adequately on what is better. Thus, practical wisdom cannot be either science or art.

It is interesting that this type of knowledge is often neglected, which is understandable, because anything we want to base on solid, objective bases, has to be based on data and science, with no place for direct knowledge of particulars. But if we do that, we may miss information that is crucial for good decision-making. Fortunately, in the last few years, phronēsis is being recovered in the world of management, as stated above.

4.2. Hayek's View of the Economic System and Knowledge

In a completely different context, and more than 24 centuries later, Hayek [33] showed the crucial importance of specific knowledge of time and place for the operation of the economic system. In fact, it is the core of his justification of free market economies. According to Hayek, centrally planned economies cannot be efficient because some knowledge, which is necessary in order to make good decisions, is not of the kind that is easily transmitted or accumulated in the central planning board. Only individuals possess it:

"Today it is almost heresy to suggest that scientific knowledge is not the sum of all knowledge. But a little reflection will show that there is beyond question a body of very important but unorganized knowledge which cannot possibly be called scientific in the sense of knowledge of general rules: the knowledge of the particular circumstances of time and place. It is with respect to this that practically every individual has some advantage over all others in that he possesses unique information of which beneficial use might be made, but of which use can be made only if the decisions depending on it are left to him or are made with his active cooperation" [33] (pp. 521–522).

Then, Hayek continues, saying that knowing and putting to use a machine not fully employed, which are the specific skills of specific people, which are the temporary opportunities in the market for real estate, or that of the arbitrageur about local differences in prices, amongst others, would permit to whom possesses such knowledge perform eminently useful functions, based on special knowledge of circumstances that is not known to others.

The type of knowledge suggested by Hayek is not exactly practical wisdom but is at least part of it. It is only one kind of knowledge that is needed for action, and, thus, is part of practical wisdom; but practical wisdom has to go beyond that, including knowledge of the effects (some of them unexpected) of possible actions that might be taken by the decision-maker, which the Hayek paper contemplates only implicitly. It is important to remember this today, when the "analytics" and "algorithms" that cannot include this type of information seem to be proposed as the overwhelming solution to decision-making in organizations.

4.3. Polanyi and Tacit Knowledge

Polanyi went one-step further. In his 1958 book *Personal Knowledge* he started elaborating on the notion of "tacit knowledge," i.e., that knowledge that we all have but do not know we do [34]. "We know more than we can tell" has been a fortunate expression used by Polanyi [35].

"Tacit knowledge" is a kind of knowledge that we all have to some degree, and use for some specific purposes, but which we are not able to (1) make explicit in words and/or (2) transfer to other people. These are two interrelated characteristics, but not exactly the same. In any case, it is the kind of knowledge that is acquired through action and contact with the real world, and typically (almost always, one might say) through association with other people in the context of an organization. Often, the use of this knowledge requires cooperation between several people, in the same spirit of the Hayek quote above. In addition, for any complex professional activity, the tacit knowledge required may be "bigger" than the explicit knowledge actually used, thus making the problem of organizing more complex.

A practical paradox emerges from what we just said. In the last few decades, employee turnover has increased greatly, even in countries where it used to be low or even very low (many European countries, for instance). Jobs for life, which used to be almost the rule, are now the exception: Remaining in the same job for more than, say, three or four years is rare. Yet, when employees leave the firm where they have been working during this time, they take away the tacit knowledge that they have acquired at a high cost to the firm. In addition, if the firm is successful, the competitive advantage resides largely in that tacit knowledge, because by definition it cannot be copied. Thus, and since it cannot be retained either, every time an employee leaves a firm, part of the competitive advantage may be lost irretrievably. Then, we need to invent "fads" like "talent management" to retain this knowledge within the organization [36].

Unfortunately, this concept of knowledge has been misinterpreted or misunderstood quite often. In this vein, we can find on a web page the following examples of "tacit" knowledge [37]: (1) How to speak a language; (2) innovation; (3) leadership; (4) aesthetic sense; (5) sales; (6) body language; (7) intuition; (8) humor; (9) snowboarding; (10) emotional intelligence.

None of them seems to be a very good example of tacit knowledge. "How to speak a language" seems to be a very explicit type of knowledge, and "innovation," "humor," or "intuition" are not types of knowledge. If we list them here, they are just examples of how tacit knowledge can be misunderstood. In contrast, going to the original source [35] (p. 206), we can find the following example:

> "Indeed, even in the modern industries the indefinable knowledge is still an essential part of technology. I have myself watched in Hungary a new, imported machine for blowing electric lamp bulbs, the exact counterpart of which was operating successfully in Germany, failing for a whole year to produce a single flawless bulb."

The type of knowledge that the employees of the German plant had is the knowledge of particulars, of details, of specific skills, that can be learnt through example and practice. Quite obviously, this type of knowledge is relevant for management purposes, and even with more reason for management control, since, by definition, the measured variables never perfectly reflect the desired results.

4.4. Nonaka and Knowledge Management

In the 90s of the past century, the discipline of "knowledge management" acquired relevance. Nonaka [38] argued that organizational knowledge was created through a dialogue between tacit and explicit knowledge, thus insisting in the idea of the importance of tacit knowledge in an organizational context and that tacit and explicit knowledge can be conceptually distinguished only along a continuum. Later on, Nonaka and Toyama [39] underlined how subjectivity is an important element in the definition of strategy and that many excellent firms "have pursued their own, absolute values as goals, rather than as a mere means to the goal of profit maximization." This is, of course, in agreement with the Aristotelian concept of phronēsis, which, as we discussed, is the capacity of deliberating what is good and what is

not in a wide sense. Andreu [40] showed the implications that this had for creating and developing competitive advantage and distinctive competence [41] by firms, which of course is something crucial for organizational sustainability, the long-term survival of organizations.

Nonaka et al. [42] went further, editing a special issue of *Management Learning* where phronēsis is the key concept. In their introduction to the issue, Nonaka el al. [42] suggest that the "spectacular failures" that we have witnessed in the last decades have to do with the decrease of the capacity for exercising "vision and prudence," and that practical wisdom should be a substantial element of organization and management. In different aspects, but along similar lines, other scholars have recovered this concept for social science in general and for management in particular [1,6,8,43–45].

Therefore, sustainable management models should incorporate an idea of knowledge assumed to include information that is non-quantitative, implicit, particular and, sometimes, not easily transmissible, to incorporate in their types of decision-making. Formal models of agency theory ignore this fact or simplify it by assuming merely information asymmetry between evaluator and the person(s) evaluated. The concepts of tacit knowledge and subjectivity fall short of phronēsis, as does the Hayek view; but the latter intends to show the impossibility of central planning and, therefore, the necessity of decentralization at the macro level of a country. Therefore, in decentralized decision-making in organizations as well, the "center" will have to trust the decision-making subunits and be extremely careful in the evaluation process, because it ignores more than it knows about what happened. Then, "automatic" systems in management that have become fashionable in the last few decades (balanced scorecards, key performance indicators—KPIs, big data and analytics, and so on) are doomed to failure, as the concept of knowledge required is close to the intellectual virtue of phronesis, as we are going to examine in the following examples of real managerial issues. This knowledge can be shared by example, and at the same time allow to be complemented with moral virtues regarding which objectives are morally sound to be pursued, as it is the case of justice [16,17].

We summarize these approaches to knowledge and intellectual virtues in Table 1.

Table 1. Types of knowledge and intellectual virtues, characteristics, and approaches.

	Aristotle	Hayek	Polanyi	Nonaka
Universal/Transmissible	Episteme + nous = philosophical wisdom: It is always true Doxa: It is possibly false	Scientific, quantified	Explicit	Explicit
Dialogue between Universal and Personal				Organizational knowledge
Personal/Specific/ Tacit/non-Transmissible	Practical wisdom	Unorganized, individual knowledge of circumstances of time and place	Tacit (we know more than we can tell)	Tacit

5. Practical Wisdom in Some Managerial Decisions

The necessity of practical wisdom in management is something widely accepted today, as stated above. However, what its nature is and how it can be applied in practice is something harder to find. Our contribution is therefore to understand and visualize the nature of practical wisdom in real world situations, by illustrating the specific type of knowledge that is unavoidable in some of the most frequent (and repetitive) decisions that managers take in the context of management, to create a sustainable model of management decision-making. It is particularly interesting that they are repetitive, because this stresses the need for sustainability, i.e., for taking courses of action that are consistent with the long run development of the organization. We sustain our reasoning in real managerial situations that are studied in-depth. We think this is an appropriate method to reason that our theoretical proposal is sound for managerial practice.

Therefore, in this section we intend to show how practical wisdom is necessary in common managerial situations such as pricing decisions and policies, and major management control practices

like budgeting, balanced scorecards, transfer pricing, and goal setting. We therefore support our theory using some in-depth examples of managerial decisions that permit us to show the moment in which this knowledge is required to effectively make a specific decision and help managers to practice the virtue of phronēsis, helping to generate sustainable management practices.

5.1. Pricing Decisions and Pricing Policies

The establishment of pricing policies and making specific pricing decisions are important situations where we can appreciate the elements of the different types of knowledge.

Cost accounting textbooks (following basic economic principles) show how one can maximize profit in the short run by maximizing the contribution of the products. For this purpose, on paper, the firm needs to know the number of units expected to be sold at every price level, and then calculate which price makes that contribution greatest. Obviously, the variables on which the decision is to be made (costs, demand, capacity) are interrelated in general in a complex way. However, there are simplified situations where one can give a general rule that can be applied mechanically. For instance, in the typical textbook problem, e.g., [46] (p. 431), of accepting or not a special order at a given price by a customer. It is assumed that this will not have any impact on other orders or other prices; that the customer is not willing to negotiate a higher price; that the firm is working below capacity, and so on. Then, if the price offered by the customer is higher than the variable costs, the order should be accepted at the price offered. This is a simple application of the general microeconomic principle that "marginal revenue must equal marginal cost."

When the situation is not as simple as the textbook example, a pricing decision becomes more complex; in fact, a manager seldom knows with any degree of accuracy what the marginal revenues or the marginal costs are. Therefore, for pricing purposes, one must develop some phronēsis based on experience that takes into account not a general rule like the microeconomic principle of equating marginal revenue and marginal cost, but what one can expect in this specific firm, acting in this specific market, under such and such specific conditions, and so on.

Furthermore, attempting to maximize profits in this decision may not be the wise thing to do. If, for instance, the price that maximizes profit in this period (in case we are able to calculate it) is higher than that of other competitors that sell similar quality, we may find ourselves in the next period having lost a sizeable part of the market. That is what makes it interesting to establish a pricing *policy* (as something different from a specific decision), which is still more complex because it encompasses a number of years. Going back to microeconomic theory again, the firm should adopt a vector of prices (one for each year, or perhaps even a shorter period) to maximize the present value of the contribution of the product. Quite clearly, this is something impossible to develop in practice. Again, and a fortiori, the specific knowledge about the firm and its internal and external circumstances, its strategy, and so on, is going to be crucial. Then, the firm may establish a pricing policy based on a cost-plus rule, or perhaps on information about a competitor price, or in a variety of alternative forms. Which pricing policy a firm establishes depends on the specific knowledge of the product, the market, the competition, the firm's strategy, and so forth. That is, not on scientific knowledge, but on the knowledge of particulars. Not all firms in an industry have the same strategy, and not all of them are equally successful; the singularity of the strategy, and, thus, of the pricing policy it implies, may often be the key to success. Therefore, managers making these types of decisions accumulate knowledge of particulars and through this accumulated knowledge and practice, decisions on prices improve by being practically wiser over time.

5.2. Practical Wisdom in Management Control Systems: Budgeting, Balanced Scorecards, and Transfer Pricing

The main tool for managing organizations are management control systems (MCS) [47–49]. MCS help managers to organize the work by: (1) Setting objectives for the organization as a whole and for all its subunits; (2) evaluating what has actually been achieved after these objectives have been put into practice; (3) diagnosing how the organization as a whole and its subunits are doing at any point in

time; and (4) taking some control action by (among other possibilities) establishing a system of implicit and explicit rewards for the responsible people [50] (chapters 16, 26, 31, and 32). In designing MCS, managers attempt to achieve the highest possible levels of goal congruence between the organization as a whole, every subunit, the managers, and the people involved. Goal congruence is "the central purpose of a MCS" [47] (p. 98), as it is important that MCS are designed and used in a way that, when individuals pursue their personal goals, they achieve at the same time the organizational goals. Thus, MCS help goal congruence processes in which the actions people are led to take in accordance with their perceived self-interest are also in the best interest of the organization. Of course, goal congruence is never perfect, and in fact depends more on the way MCS are used than on the way they have been designed. Even if there may not be perfect goal congruence, MCS at least should not encourage individuals to take actions that go clearly against the best interest of the organization (i.e., should not generate goal incongruence).

It is not new to relate moral virtues and MCS. Some recent research has found the importance of such virtues regarding the use of MCS [51,52], specifically the role of justice in the use and design of MCS as an important requirement, to possibly attain a high degree of goal congruence. But the role of intellectual virtues has not been included that often. One approach includes justice and practical wisdom to generate sustainable management. In fact, this approach considers that sustainable management should include justice and decide following practical wisdom, because this is the way to attain wise management practices that are sustainable in all decisions made [17].

But, in many other models, practical wisdom is often forgotten in the treatment of MCS, even though, as we have seen, it has been taken into account in other contexts in management. Yet, MCS are possibly tools for the use of which practical wisdom is more necessary than in any other. When one has to evaluate the performance of an organization, an organizational unit, or the people in charge of them, it is crucial to understand the specific circumstances of the unit, of the specific people involved, and of the possible cause and effect relationships between their actions and the results obtained; this has to do with practical wisdom because it goes well beyond the other types of knowledge, mainly the intellectual virtues briefly analyzed above: Sophia, nous, tekné, or epistêmê. Thus, managers have to acquire and develop practical wisdom, i.e., the type of knowledge involved in deciding over particulars, because that is what they have to do. In spite of recent advances in big data, analytics, and artificial intelligence, mechanistic uses of MCS alone are bound to be unsuccessful and they may even be harmful [53,54]. A straightforward application of a mechanical rule can only be done in a mechanical world, in situations (like in some areas of engineering) in which the scientific bases are well understood, and replication is possible because all is needed there is the theoretical or philosophical wisdom: The practice consists simply in following the rules. Management, in contrast, is a world of particulars, and MCS are tools for these particulars. O'Neil's *Weapons of Math Destruction* (53) provides examples, for instance, a teacher being fired because an AI algorithm said this was the right thing to do, while both the parents of the students and the school's management were completely satisfied with the teacher's work. This example reflects how an algorithm can make a decision because some qualitative variable, for instance, that has been quantified in a necessarily subjective way, is some decimal points below the value that the algorithm itself has decided should be attained. Therefore, practical wisdom must be developed and applied.

Management techniques need some type of evaluation if they are to be applied to a specific situation. There is a potential positive usefulness in most of them, but the evaluation of that potential in the next situation cannot be based exclusively on the past positive "results" we had using the same technique, no matter how many times this has happened. To evaluate whether the technique is useful in one particular case, we would have to be able to evaluate the degree of practical wisdom with which it has been applied in past cases, because otherwise we are missing an essential element of success. The only way to solve a particular problem right is having acquired enough practical wisdom before to the extent that is needed. Of course, different problems require different amounts of practical

wisdom: Some problems are rather mechanical and simple (very few in management) and others are very complex, with lots of variables operating at the same time, and possible "surprises" ahead.

The development of the field of MCS has suffered from over-relying on specific techniques that have claimed to be the solution for all the problems in the field at some point in time. However, sometimes those techniques are simply fads that may be helpful depending on the problem at hand, but need a critical approach to evaluate their possible usefulness for each particular case. Fads and fashions have been appearing, and there is research showing that applying techniques could even be harmful when, behind a fashion, there is some type of motivation without reasoning [55] that may not develop future practical wisdom. On the contrary, they may destroy the possible practical wisdom that existed at the time of implementing the technique.

Very briefly, we want to mention three areas of MCS where this particularly applies: Budgeting, balanced scorecards, and transfer pricing.

Budgeting has possibly been (and still is, in spite of many criticisms addressed to it) the most widely used management technique [56]. However, as we just mentioned, it has been criticized by the so-called "beyond-budgeting" movement, which has proposed to eliminate budgeting entirely. Fortunately, the world of practice has not done so [57], because the problem is not with budgeting itself, but with the misuse of the budgeting procedures. The problems posed by budgeting have always been the same and have to do with subordinates "cheating" as a consequence of bosses putting too much pressure on them in order to achieve quantitative goals. For instance, by "storming," i.e., anticipating sales of the following year to, say, December, to achieve the budgeted amounts for the year; and making, of course, the problem more difficult for the following year. This has led, in many occasions, to fraud (i.e., Bausch and Lomb [58] had, in the mid-90s of the past century, a "phantom" warehouse where it sent fake sales to artificially increase profits).

All those problems related with budgeting can be solved with practical wisdom, understanding human nature, and creating a climate of trust and cooperation (i.e., developing moral virtues) within the organization [56]. This requires, of course, a detailed knowledge of the specific circumstances of the case, i.e., practical wisdom.

Interestingly, we can here make a parallel with the Aristotelian distinction made above between collective forms of phronesis (house management, law, and politics) different from the individual one; and that "perhaps one's own good cannot exist without household management, nor without a form of government." Management techniques such as budgeting, if applied within this frame of mind, can make us think that one's own good cannot exist without company's management and its form of government [15] (1141b, p. 8–10).

Closely related, the development of "balanced scorecards," which most often are in fact rather unbalanced in favor of the quantifiable variables, as tools that may solve today and forever all performance evaluation and incentive problems, as perfectly implemented devices that may provide "prêt-a-porter" solutions to the complex task of managing. Actually, they may be (and sometimes are) useful, but only if they are implemented using practical wisdom. This means, essentially, that to evaluate how good a job a manager or a division is doing, we need to evaluate the internal and external specific circumstances of the manager or the division. In abstract, a higher value of a "metric" is better than a lower one; but if you know the specific circumstances, what looks like a good performance may in fact be bad and vice versa. If this "phronetic" analysis is not done, then, "metrics" or KPIs may produce real horror stories, like those in Gibbons [59] and in Ordóñez et al. [60]. Our example in goal setting below is parallel to this view.

Transfer pricing is another technique that may be very useful in any decentralized company with more than one interrelated organizational unit, where in all of them it makes sense to calculate an income figure. Do transfer pricing systems "work"? We have seen, for instance, managers that do not even want to think about the possibility of using them because "we tried this, and it does not work." This is an absurd answer to an absurd question if asked in general. First, because there are situations where, by their own nature, they are not structurally adequate for transfer pricing: Whenever the

intra-company transactions are a big percentage of every unit's income statement, it may not make sense to decentralize and/or calculate divisional income. Notice, however, that in order to make this decision correctly one needs practical wisdom—knowledge of the specifics of the situation, what is some way, but could be different. No technique can provide a ready-to-apply solution.

Second, even if the multidivisional firm has an adequate structure that has been designed with practical wisdom, practical wisdom is necessary every year, every minute, in order to operate the transfer price system. If top management, for instance, allows one division to "exploit" another one, or if there is no real decentralization because top management makes most of the transfer pricing decisions, then the "system" will not work. However, the "system" should not be to blame for that; rather, the lack of practical wisdom on the part of the divisional and/or top managers should. Therefore, whenever a manager states that "we have tried this and it did not work," the answer has to be, "what did you do, exactly, in detail?" Unless the details of the application are known, one cannot answer the question, because the practical wisdom is in the details; and without practical wisdom, no management system can ever succeed. Two famous cases illustrate situations where no set of rules will accomplish perfect goal congruence in the short run, but practical wisdom and the development of moral virtues can in the long run: The A.B. Thorsten (1969) series and Polysar [61,62]. Therefore, through practical wisdom, decisions taken generate specific knowledge that can allow sustainable management practices to be spread and be part of how things are done and decided in this organization.

5.3. Goal Setting

Goal setting is to some extent related to budgeting; budgeting may in fact be considered a particular case of goal setting. Its usefulness, "in general" is seldom doubted. However, there have been clearly excessive claims by its proponents. Locke and Latham state that, "So long as a person is committed to the goal, has the requisite ability to attain it, and does not have conflicting goals, there is a positive, linear relationship between goal difficulty and task performance" [63] (p.265). This is a strong statement: A "linear" relationship between two variables that are, to say the least, hard to measure may not even be conceivable; but this can be considered a minor point. In fact, there is a much more serious problem in that statement: A "positive, linear relationship" must mean that other non-quantifiable variables cannot negatively influence the results and, thus, are irrelevant. Alternatively, we may think of it as "conflicting goals" always existing, because the quantifiable goals are always, in any complex management situation, only a part (perhaps even a small part) of the results that have to be obtained.

This is quite the contrary of our reasoning;, and the horror stories provided by Ordóñez et al. [60] clearly falsify the previous Locke and Latham quote. In good logic and good philosophy of science, a single example to the contrary, dismissed by Locke and Latham [64] as "anecdotal," is sufficient to show that a universal statement like that of Locke and Latham is, in general, false. In fact, Ordóñez et al. (2009) provide several situations where specific goals have been dysfunctional, and thus falsify the previous statement abundantly.

Actually, to decide what to do and how to do it, it is necessary to use MCS with practical wisdom. One should not decide to use or not to use a specific technique just because it has worked or not worked in the past or in some other organization case. Previous experience, of course, is important, but to make this kind of decision one needs to understand the particular case at hand, consistently with the expressed theories of Aristotle, Hayek, Polanyi, and Nonaka. We cannot avoid trying to understand the specific circumstances of the case, see how they have an effect in the organization, and solve the problem in that particular situation. Samples and percentages are not the type of methods that are useful to estimate or validate a specific use of a technique: The knowledge involved is about particulars, not about a general rule that often is already shown to have (perhaps many) exceptions. Practical wisdom is the indispensable type of knowledge to have.

6. Practical Wisdom and Moral Virtues

We have seen how practical wisdom (an intellectual virtue) is necessary for sustainable management, looking at specific examples. We have examined that management control systems are the main tool of management to guide the efforts of all individuals within the organization towards a common goal through goal congruence and to generate sustainable management practices. But practical wisdom is an intellectual virtue about specific circumstances; and, thus, cannot be the object of an "automatic" system of evaluation and rewards. Practical wisdom only tells us what is "good" in general, to achieve a given end, but it does not say whether this end in itself is good, nor does it put it into practice.

According to Aristotle, Socrates thought the virtues were "instances of reason (for he thought they were, all of them, forms of scientific knowledge), while we think that they involve reason". It is clear to him, then, "that it is not possible to be good in the strict sense without practical wisdom, or practically wise without moral virtue" [15] (Book 6, 1144b, p. 116). The consequence for MCS is clear: Besides practical wisdom, moral virtues are needed. Mainly, of course, the virtue that he considers the most important—justice. Since MCS consists in establishing goals for individuals and then evaluating what they do and deciding on the rewards or punishments they deserve, justice is a key concept. Justice has also been considered crucial to generate social sustainable organizations, in which people are willing to share knowledge [16]. At the same time the inclusion of justice generates sustainable management that helps to incorporate the right objectives and jointly with the knowledge achieved with practical wisdom, can achieve wiser management decision-making [17].

Actually, in the management control literature, justice has traditionally appeared, often under the name of "fairness." Vancil [65] was suggesting that fairness should be included as a criterion for management control systems design, even though it was second to goal congruence in financial terms. Eccles [66] proposed in the transfer pricing setting that fairness was to be indispensable for a good solution to the problem. Cugueró-Escofet and Rosanas [52] make a distinction between formal justice (that of the system in abstract, as a set of rules), informal justice (that of using the system in practice), and fairness as the perceptions of the individuals involved. Then, they proceed to show that justice in management control systems promotes goal congruence, while its absence deteriorates the system. Therefore, it is never a matter of choosing between justice and goal congruence to find an appropriate 'middle point' where we do not have to sacrifice too much 'control' so that employees do not feel treated too unfairly, as Eccles suggests [67] (p. 270). On the contrary, justice (and more specifically, informal justice as defined by Cugueró-Escofet and Rosanas [52]) contributes decisively to increase goal congruence and, therefore, to attain the organizational objectives.

From this point of view, organizational objectives themselves should be established with justice as an important (perhaps even the most important) consideration, because is in just environments where most of the stakeholders feel they are receiving according to their contributions, and social sustainability is therefore reinforced. It is precisely by including the type of knowledge offered by practical wisdom that the most appropriate courses of action that lead to just objectives are selected. Therefore, practical wisdom helps to attain the right and just objectives and therefore reinforces sustainable management practices to achieve a wiser management.

7. Discussion and Practical Implications

Organizations should be aware that managers should focus on the long term and have the right objectives that lead to becoming sustainable over time. The objectives that should be worth pursuing, therefore, are the ones that generate justice for all stakeholders, and the generation of the appropriate knowledge over time to pursue them better on further occasions. The type of knowledge needed is a situational knowledge of particulars, associated to the courses of action that increase the probability of attaining such just goals. We revised that and reached the conclusion that practical wisdom is the main intellectual virtue that managers need to practice over time. Once this intellectual virtue is practiced, and just objectives are attained, managers incorporate in their background such

an experiential knowledge that can be spread into the organization, by example, and shared among the organizational members so that more managers engage in the similar type of decision making. Therefore, a virtuous cycle starts and is reinforced as more decisions are made. In fact, our research is complementing the current one that considers that perceiving just objectives leads to increase knowledge sharing behaviors [16]; and some theoretical approaches have considered that justice and practical wisdom altogether improve managerial practices and lead managers to be wiser over time [17]. Here we discuss from the point of view of knowledge management that practical wisdom is unavoidable, and most managerial decisions need the development and sharing of this specific type of knowledge in organizations.

Simplifying a little bit, the two approaches to management considered can be divided into the ones that focus primarily on monetary rewards and the ones that pursue more intangible objectives, such as generating happiness as the right objective for organizational members. We argued that the second approach is right in terms of choosing worthy long term objectives, but managers need guidance to find an equilibrium of different aspects of sustainability; that must include economic sustainability, to arrive to courses of action that attain the objectives by learning the right ways to attain them. This is the path to creating virtuous cycles that could then lead to sharing the appropriate knowledge to generate sustainable management practices over time. In fact, organizations should create a fair environment where all stakeholders perceive they are receiving according to their contributions, as a way to reinforce social sustainability. The several courses of action to generate fairly perceived goals should incorporate practical wisdom as the main knowledge in place to balance what each stakeholder contributes and receives, as this will increase engagement of all stakeholders as they perceive decisions are made to allow them to receive fair treatment according to their contributions.

This is consistent with research that approached this need for justice and practical wisdom in terms of game theoretical approaches, in which reputation is also a driver that promotes the inclusion of fair objectives and, practically, strategies to select courses of action to attain them. This research shows that to generate sustainable management, the inclusion of both virtues is necessary for the long-term reputation of the organization [68].

8. Conclusions

We started stating that managing organizations is a very complex endeavor. Even in very small companies, trying to arrive at a common goal through people is not easy at all. Many theories appear from this point of view. On the extremes, we can find a view that is mainly economistic and considers that what counts are essentially monetary rewards (wages to employees, profits to stockholders) and explicit contracts between them. On the other extreme, we find "humanistic management" or "positive organizational scholarship," which consider that companies have the final objective of generating happiness, with a view of promoting places in which people can find their life worth living.

Both approaches are partly useful but overlook the fact that in organizations there is a process of decision-making where some very subtle type of knowledge is necessary to make the right decisions: The Aristotelian "practical wisdom."—detailed information which is acquired through practice and transmitted by the example of other people. Practical wisdom is particularly important in management to generate sustainable practices, as it helps to choose the best suited courses of action to attain the desired objectives and long run survival. We have related the concept of practical wisdom with the Hayek concept of knowledge of time and place, the Polanyi concept of tacit knowledge, and Nonaka's knowledge management, and applied it to the specific type of knowledge that is necessary in terms of evaluating what people do and attaching a system of rewards to the results, taking into account this type of information. In this regard it helps the system to be just in terms of incorporating the right knowledge that comes from the situation and particularities, which is necessary to create justice in the results.

Finally, we conclude the paper by suggesting that moral virtues are necessary to design and use any management system and to decide using it. Is justice the main moral virtue that is crucial

for indicating what objectives are worth pursuing to generate a sustainable management for the organization? Once justice as an objective is established, practical wisdom is the type of knowledge that would need to be in place to attain it. This type of loop creates a virtuous circle that reinforces sustainable management over time.

9. Limitations of This Study and Suggestions for Further Research

This paper has attempted to establish the theoretical bases on which we can base the application of the concept of practical wisdom or phronesis to management control situations, and we have discussed that reviewing some of the most common situations found in management, and, more specifically, in management control. We have not done it in any specific context, and we believe that a natural extension of our research would be to do some clinical research in a number of firms under different circumstances. For instance, in the international context, where the transfer pricing issue presents important, different problems. Then, after that, and understanding better the basic problems, statistical studies could be conducted that could support our findings with several approaches, for example, surveys on specific questions that can address a more specific analysis of particular types of decisions in specific contexts.

Author Contributions: The initial idea, the examples and the first (rough) draft came from J.M.R.; the elaboration of the Aristotelian concepts, by N.C.-E.; and the final form of the article, roughly 50% each after a lot of discussions, library research and modifications of which no individual responsibility can be claimed. All authors have read and agreed to the published version of the manuscript.

Conflicts of Interest: The authors declare no conflict of interest.

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