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Kant's Definition of Science in the *Architectonic of Pure Reason* and the Essential Ends of Reason

Abstract: The paper analyses the definition of science as an architectonic unity, which Kant gives in the *Architectonic of Pure Reason*. I will show how this definition is problematic, insofar as it is affected by the various ways in which the relationship of reason to ends is discussed in this chapter of the *Critique of Pure Reason*. Kant sometimes claims that architectonic unity is only obtainable thanks to an actual reference to the essential practical ends of human reason, but he also identifies disciplines that do not make this reference as scientific. In order to find a solution to this apparent contradiction, I will first present Kant's distinction between a *scholastic* and a *cosmic* concept of philosophy. This distinction expresses Kant's foreshadowing of his later insistence on the priority of practical philosophy within a true system of philosophy. Then, I will present a related distinction between technical and architectonic unity and show how Kant seems to use two different conceptions of science, one simply attributing systematic unity to science, the other claiming that science should consider the essential practical ends of human beings. I will propose a solution to this problem by arguing that, if we give a closer look to Kant's claims, the unity of scientific disciplines can be considered architectonic without taking into consideration the essential practical ends of human reason. In fact, it is only philosophy, as a particular discipline which aims to become a science, that cannot develop into a systematic whole without considering those essential practical ends. It is thus only in philosophy that we cannot reach scientificity without considering these ends.

Keywords: Architectonic Unity, Technical Unity, Science, Cosmic Concept of Philosophy

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1 Introduction

In this paper I aim to offer an interpretation of the various ways in which the relation of reason to its ends is treated by Kant in the *Architectonic of Pure Reason*. This clarification is required in order to provide a plausible definition of the unity of science that would solve the difficulties we find in some of Kant's own formulations. In fact, Kant's definition of science in the *Architectonic* chapter is problematic. He defines science as an architectonic unity of cognitions (as opposed to an only technical unity) (KrV, A 833/B 861), where the relationships between the parts are not the result of an arbitrary assemblage, but are developed according to an end given *a priori* by reason (KrV, A 832/B 860). Kant also claims that architectonic unity is only possible by making reference to the *essential* ends of reason (KrV, A 847/B 875). Essential ends are practical and are so treated by practical philosophy (KrV, A 840/B 868). This would imply the quite implausible consequence that only philosophy, insofar as it considers the systematic relationship between our knowledge and these essential practical ends, can become a science (V-Met-L2/Pölitz, AA 28: 533). All the other sciences would deserve this name only if they made reference to philosophy and to the essential practical ends of reason. This contrasts with the claim, made for example in the *Preface* to the second edition of the *Critique* (KrV, B VIIff.), in which Kant argues that metaphysics should become a science following the model of logic, mathematics, and physics. Thus, disciplines that Kant himself normally considers sciences in the eminent sense would not possess architectonic unity and consequently would not properly be sciences. One possible solution would be to claim that sciences, at least considering mathematics and physics, do not require *architectonic*, but only *technical* unity.[1] However, this would contradict Kant's explicit definition of science in the *Architectonic*.

In order to account for these problems concerning Kant's account of science in the *Architectonic of Pure Reason*, it is useful to consider together the different aims that he sought to accomplish in this relatively short chapter of the first

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1 A related problem concerns the kind of unity we find in what Kant calls philosophy in its scholastic concept, that is in philosophy as a system of knowledge (concerning either theoretical or practical concepts). Kant claims that philosophy in its scholastic understanding is scientific; accordingly, La Rocca (2003, 221) claims that its unity is architectonic. On the other hand, Tonelli (1994, 272) argues that philosophy according to its scholastic concept is technical, insofar as it is not concerned with the essential ends of reason. This view is also suggested by Ypi (2011, 144). In contrast to these views, Ferrarin (forthcoming: chap. 3) claims that philosophy in its scholastic sense is neither technical nor architectonic.

Critique.[2] First of all, Kant here gives an outline of the metaphysical system he plans to build, clarifying the place of the first *Critique* within this edifice.[3] Moreover, he further develops some thoughts concerning the relationship between theoretical and practical philosophy, introduced in the *Canon of Pure Reason,* and he presents a *cosmic* concept of philosophy that gives priority to the practical. He also gives a teleological account of science as a goal-directed activity, according to which systematicity is an essential character of science.

Kant thus presents the connection to ends, and to ends of reason in particular, as a fundamental element in understanding both the teleology of science and the priority of practical philosophy within a true system of philosophy. The relationship between reason and its ends thus has a double function in the *Architectonic.* Ends are both what gives unity to science (KrV, A 832f./B 860f.) and what represents the entire vocation of human beings (KrV, A 840/B 868). I will argue that it is this double function of the relationship between reason and its ends that generates problems and apparent contradictions in Kant's teleological account of science. That said, I believe that it is possible to find a solution to these problems by means of a closer look at Kant's claims in the *Architectonic* and in related texts.

In section 2, I will present Kant's distinction between a *scholastic* and a *cosmic* concept of philosophy. This distinction expresses Kant's foreshadowing of his later insistence on the priority of practical philosophy within a true system of philosophical doctrines. In section 3, I will present a related distinction between technical and architectonic unity. It is this distinction that generates some problems concerning Kant's definition of science in the *Architectonic.* In fact, Kant seems to use two different conceptions of science, one simply attributing systematic unity to science, the other claiming that science should consider the essential practical ends of human beings. In section 4, I propose a solution to this problem by arguing that the unity of scientific disciplines can be considered architectonic without taking into consideration the essential practical ends of human reason. To finish, in section 5, I will show that it is only philosophy, as a particular discipline which aims to become a science, that cannot develop into

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2 The relevance of this section of the *Critique* is becoming more and more evident. See for example: O'Neill 1992; Höffe 1998; Fulda/Stolzenberg 2001; Manchester 2003; 2008; La Rocca 2003, ch. 6.

3 It is not easy to interpret the outline of the system of metaphysics that Kant presents in the *Architectonic.* König (2001, 51) argues that it does not represent the true system of philosophy according to Kant. On the other hand, Höffe (1998) claims that it presents Kant's foreseen system of philosophy. Accordingly, Höffe shows how the parts of the metaphysics of nature, a branch of the outlined system, can be connected to the subdivisions of the *Critique* (1998, 626f.).

a systematic whole without considering those essential practical ends. It is thus only in philosophy that we cannot reach scientificity without considering these ends.

2 Two Concepts of Philosophy

As I have already said, one of Kant's aims in the *Architectonic* is to stress the priority of practical philosophy within a true system of philosophy. This priority can only be recognized when practical philosophy is understood in a certain way, which is when it takes into consideration the essential ends of human reason. "Morals constitutes a unity of all cognition of reason, and only he who follows its rules can be called a philosopher" [*Moral [...] macht eine Einheit der gesammten Vernunft-Erkenntniß aus, und wer ihre Regeln befolgt, kann allein Philosoph genannt werden*. V-Lo/Wiener, AA 24: 798 f.].[4] Accordingly, only a philosophical system which takes into account how human beings pursue the realization of their essential ends in the practical and moral sphere can be considered true philosophy. This necessity to consider (and to give priority to) the practical sphere within a true system of philosophy is expressed by Kant by means of what he calls the *cosmic* concept [*Weltbegriff*] of philosophy. He stresses: "from this point of view philosophy is the science of the relation of all cognition to the essential ends of human reason (*teleologia rationis humanae*), and the philosopher is not an artist of reason but the legislator of human reason".[5] Thus, the philosopher who works according to the cosmic concept, in developing a system of rational cognitions, takes into explicit consideration how these cognitions relate to the essential ends of human beings.

As I said, these essential ends have a fundamentally practical and moral character. However, Kant does not clearly state what they are. We only know that there is a hierarchy within essential ends and that they rest on a unique final end, which Kant also calls the highest.

> Essential ends are on this account not yet the highest, of which (in the complete systematic unity of reason) there can be only a single one. Hence they are either the final end, or subalternate ends, which necessarily belong to the former as means. The former is nothing

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4 References in English are given according to: Guyer/Wood 1992.

5 In dieser Absicht ist Philosophie die Wissenschaft von der Beziehung aller Erkenntniß auf die wesentlichen Zwecke der menschlichen Vernunft (*teleologia rationis humanae*), und der Philosoph ist nicht ein Vernunftkünstler, sondern der Gesetzgeber der menschlichen Vernunft. (KrV, A 839/B 867)

other than the entire vocation of human beings, and the philosophy of it is called moral philosophy.[6]

The final, or highest, end of human reason is thus the "entire vocation of human beings". The relationship between the essential ends of reason and this final end can be better understood if we read the *Architectonic* together with the *Canon of Pure Reason*. As is well known, this chapter is concerned with the priority of practical reason over speculative reason. Here, Kant argues that reason tends to surpass the limits of possible experience and to form transcendent ideas concerning the freedom of the will, the immortality of the soul and the existence of God, not so much for a speculative interest of reason, as for a practical interest (KrV, A 797ff./B 825ff.). Kant thus claims that "the highest ends, however, are those of morality, and only pure reason can grant us cognition of these" [*Die höchsten Zwecke aber sind die der Moralität, und diese kann uns nur reine Vernunft zu erkennen geben*. KrV, A 816/B 844].[7] The essential ends of reason should thus be considered practical. It is surely true that in the *Canon* (just as in the *Architectonic* and in the *Appendix to the Dialectic* for example) Kant seems to identify an end of reason which is chiefly speculative. This end is nothing but the search for the most comprehensive and unitary system of knowledge possible. Kant's question: "what can I know?" specifies this end and it is Kant himself who claims that this end is "merely speculative" [*bloß speculativ*; KrV, A 805/B 833]. However, even though the greatest possible extension of knowledge is surely an end of reason, it does not seem to be one of its *essential* ends. Accordingly, one of the chief tasks of the *Canon* is to show that this speculative end should be subordinated to the pursuit of the essential ends of reason in the practical sphere.

In this context, Kant introduces the concept of the highest good and he defines it as follows: "thus happiness in exact proportion with the morality of rational beings, through which they are worthy of it, alone constitutes the highest good of a world into which we must without exception transpose ourselves in ac-

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6 Wesentliche Zwecke sind darum noch nicht die höchsten, deren (bei vollkommener systematischer Einheit der Vernunft) nur ein einziger sein kann. Daher sind sie entweder der Endzweck, oder subalterne Zwecke, die zu jenem als Mittel nothwendig gehören. Der erstere ist kein anderer, als die ganze Bestimmung des Menschen, und die Philosophie über dieselbe heißt Moral. (KrV, A 840/B 868)

7 In the *Canon,* Kant uses the adjective *essential* to refer to ends of reason only twice (KrV, A 818, 831/B 846, 859). Here, Kant refers to reason's ends (in the plural) also using the adjectives: *highest* (KrV, A 797, 804, 812, 816/B 825, 832, 840, 844), *great* (KrV, A 805/B 833), *ultimate* (KrV, A 819/B 847). This seems to contrast with the *Architectonic*, where Kant claims that there is only one *highest* end. However, these incongruences notwithstanding, we find in both the *Canon* and the *Architectonic* a hierarchy of ends with a unique end on top.

cordance with the precepts of pure but practical reason".[8] As is well known, Kant uses the concept of the highest good in order to argue that the existence of the moral law gives us a justification to believe in those ideas of reason which we were not able to prove theoretically. This is a problematic issue in Kant scholarship that I do not want to address here.[9] For our purposes it is sufficient to note that the final end of reason is sometimes equated with the highest good (V-Met-K3/Arnoldt, AA 29: 948; V-Lo/Dohna, AA 24: 698). We could thus understand the final, or highest, end of reason presented in the *Architectonic* as the realization in the world of this conjunction of happiness and adherence to the moral law. As a final end of humanity the highest good is the realization of a moral world in which people reach happiness by mutually respecting the moral law.[10] The essential ends of reason, which are subordinated to this final end, could thus be understood as necessary means to this final end. Hence, philosophy, developed according to its *cosmic* concept, should develop a system of cognitions that teaches how the realization of the highest good, as a necessary aim of humankind, is at least possible. Philosophy should thus take into consideration the fundamental moral vocation of human beings.

Kant contrasts the cosmic concept of philosophy with its *scholastic* concept [*Schulbegriff*]. According to the latter, philosophy is "a system of cognition that is sought only as a science without having as its end anything more than the systematic unity of this knowledge" [*System der Erkenntniß, die nur als Wissenschaft gesucht wird, ohne etwas mehr als die systematische Einheit dieses Wissens* [...] *zu haben*, KrV, A 838/B 866]. In the development of such a system the essential ends of reason are not taken into consideration. The essential practical and moral vocation of human beings is thus neglected. Accordingly, Kant describes philosophy in its scholastic sense as a doctrine of skill (V-Met-L2/Pölitz, AA 28: 532), and he claims that it follows only arbitrary ends: "I determine the aim of a science in accordance with scholastic concepts if it is regarded only as one of the skills for

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8 Glückseligkeit also in dem genauen Ebenmaße mit der Sittlichkeit der vernünftigen Wesen, dadurch sie derselben würdig sind, macht allein das höchste Gut einer Welt aus, darin wir uns nach den Vorschriften der reinen, aber praktischen Vernunft durchaus versetzen müssen [...]. (KrV, A 814/B 842)

9 On the *Canon* see: Recki 1998. On the problem of a practical justification of our beliefs see: Willaschek 2010.

10 As Yovel has noted, Kant presents various versions of the concept of the highest good (Yovel 1980, 48 ff.). For our concerns, it is sufficient to note that the highest good can concern the personal accomplishment of an individual subject (who is happy and worthy to be happy at the same time) or the realization of a moral order in the world, through which humankind as a whole reaches happiness. On the political dimension of the highest good see: Ypi 2011.

certain arbitrary ends" [*mithin bestimme ich die Absicht einer Wissenschaft nach Schulbegriffen, wenn sie nur als eine von den Geschicklichkeiten zu gewissen beliebigen Zwecken angesehen wird*; KrV, A 839n./B 867n.]. The scholastic philosopher cannot thus be considered a real philosopher, but only an "artist of reason" [*Vernunftkünstler*], along with the mathematician, the logician and the naturalist. By contrast, the true philosopher is a "legislator of reason" [*Gesetzgeber der menschlichen Vernunft*; KrV, A 839/B 867], even though this idea of the philosopher as a "knower of wisdom" [*Kenner der Weisheit*; V-Met-L2/Pölitz; AA 28: 534] remains only an archetype. In contrast to philosophy according to the cosmic concept, philosophy according to the scholastic concept constructs an edifice of knowledge without taking into consideration which ends this edifice might serve, being thus indifferent to essential practical and moral ends. The artist of reason "is one who equips reason for any end one might wish" [*ist der, der die Vernunft zu allen beliebigen Zwecken einrichtet*; V-Lo/Wiener, AA 24: 798]. It is important here to specify that both practical and theoretical philosophy could be developed according to a scholastic concept. That said, the possibility of taking into consideration the essential practical ends of humankind is only open to practical philosophy. It is for this very reason that, according to Kant, practical philosophy should have priority in a system of philosophy.

The distinction between the cosmic and the scholastic concept of philosophy – between a system of cognition developed according to the essential ends of human beings and a system of knowledge indifferent to practical ends – expresses at best Kant's intention to show, in the *Architectonic*, some kind of primacy for practical philosophy within a true system of philosophy. However, Kant also uses characteristics of the cosmic concept of philosophy to indicate what is essential to being a science. This would imply the quite implausible consequence that we could not consider mathematics and physics sciences, but only *arts*. Therefore, only philosophy according to its cosmic concept would be true science. These problems become evident when we consider the distinction between architectonic and technical unity.

3 Architectonic Unity, Technical Unity and the Definition of Science

Kant relates the distinction between the cosmic and the scholastic concept of philosophy to another distinction introduced in the *Architectonic*: the distinction between *architectonic* and *technical* unity. He defines these two kinds of unity as follows:

> A schema that is not outlined in accordance with an idea, i.e., from the chief end of reason, but empirically, in accordance with aims occurring contingently (whose number one cannot know in advance), yields technical unity, but that which arises only in consequence of an idea (where reason provides the ends *a priori* and does not await them empirically) grounds architectonic unity. What we call science, whose schema contains the outline (*monogramma*) and the division of the whole into members in conformity with the idea, i.e., *a priori*, cannot arise technically, from the similarity of the manifold or the contingent use of cognition *in concreto* for all sorts of arbitrary external ends, but arises architectonically, for the sake of its affinity and its derivation from a single supreme and inner end, which first makes possible the whole.[11]

The difference between architectonic and technical unity recalls some issues that we have discussed in the previous section. Architectonic unity is developed according to *a priori* ends of reason, which, eventually, rest on a "supreme and inner end". This supreme and inner end could be seen as the highest end of reason, which is the main concern of philosophy according to its cosmic concept. By contrast, technical unity is developed according to "all sorts of arbitrary and external ends". Here we find a distinction which is similar to that between a doctrine of skill (the scholastic concept of philosophy) and a doctrine of wisdom (the cosmic concept of philosophy) (V-Met-L2/Pölitz, AA 28: 532). Accordingly, technical unity does not take into consideration the essential ends of reason, but only arbitrary ends.

As it is clear from the passage just quoted, Kant uses architectonic unity to provide a definition of science. Kant claims that "architectonic is the doctrine of that which is scientific in our cognition in general" [so ist Architektonik die Lehre des Scientifischen in unserer Erkenntniß überhaupt]. Architectonic is "the art of systems" [*die Kunst der Systeme*] and systematic unity "is that which first makes ordinary cognition into science" [*dasjenige ist, was gemeine Erkenntniß allererst zur Wissenschaft [...] macht*; KrV, A 832/B 860]. Architectonic unity is thus treated as synonymous with systematic unity, and the latter is named a condition of scientificity. If we thus understand architectonic unity and systematicity as conditions

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11 Das Schema, welches nicht nach einer Idee, d.i. aus dem Hauptzwecke der Vernunft, sondern empirisch, nach zufällig sich darbietenden Absichten (deren Menge man nicht voraus wissen kann), entworfen wird, giebt technische, dasjenige aber, was nur zu Folge einer Idee entspringt (wo die Vernunft die Zwecke *a priori* aufgiebt und nicht empirisch erwartet), gründet architektonische Einheit. Nicht technisch wegen der Ähnlichkeit des Mannigfaltigen, oder des zufälligen Gebrauchs der Erkenntniß *in concreto* zu allerlei beliebigen äußeren Zwecken, sondern architektonisch um der Verwandtschaft willen und der Ableitung von einem einigen obersten und inneren Zwecke, der das Ganze allererst möglich macht, kann dasjenige entspringen, was wir Wissenschaft nennen, dessen Schema den Umriß (*monogramma*) und die Eintheilung des Ganzen in Glieder der Idee gemäß, d.i. *a priori*, enthalten [...]. (KrV, A 833/B 861f.)

of science, and we claim that this kind of unity is obtainable only in connection with the essential practical ends displayed in philosophy according to its cosmic concept, we reach the quite implausible conclusion that only philosophy according to its cosmic concept could be true science. Kant himself seems to reach this conclusion when he stresses that the mathematician, the logician and the naturalist (just as the scholastic philosopher) are only artists of reason (KrV, A 839/B 867, V-Lo/Wiener, AA 24: 798). Moreover, he claims that the only way to develop our scientific cognitions systematically is to follow the "architectonic, which is a system in accordance with ideas, in which the sciences are considered in regard to their kinship and systematic connection in a whole of cognition that interests humanity" [*Dazu giebt die Architektonik der Wissenschaften Anleitung, die ein System nach Ideen ist, in welchem die Wissenschaften in Ansehung ihrer Verwandtschaft und systematischen Verbindung in einem Ganzen der die Menschheit interessirenden Erkenntniß betrachtet werden*. Log, AA 09: 48f.]. Since only philosophy can indicate the essential ends of humanity, "philosophy is the only science that has a systematic connection, and it is that which makes all the other sciences systematic" [*Philosophie ist nur die einzige Wissenschaft, die einen systematischen Zusammenhang hat, und sie ist es, die alle andere Wissenschaften systematisch macht*. V-Met-L2/Pölitz, AA 28: 533]. As we saw, systematic unity is a condition of science. Thus, if "philosophy is the only science that has a systematic connection", it follows that only philosophy in its cosmic concept can be considered science and "all the other sciences", in order to take part to this scientificity, must be part of a complete edifice of human knowledge with philosophy on top.

These claims contrast with many other passages in which Kant identifies conditions of scientificity that do not require a consideration of essential ends of reason, or in which he uses sciences other than philosophy as a model of scientificity for the latter. For example, in the *Metaphysical Foundations of Natural Science,* he indicates systematicity as a condition of science understood in a broad sense (including also empirical sciences), whereas he recognizes only apodictic sciences (like mathematics and physics) as proper sciences (MAN, AA 04: 648ff.).[12] Here he does not mention essential practical ends as a condition of reaching architectonic and systematic unity. Furthermore, in the *Preface* to the second edition of the *Critique of Pure Reason*, he indicates logic, physics and mathematics as models of scientificity for metaphysics (KrV, B VIIff.). According

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12 On Kant's conception of proper science see: Watkins 2007, Van den Berg 2011. Of course, one could claim that the systematicity of the empirical sciences is a lower form of systematicity which only provides technical unity. However, apodictic sciences such as mathematics and physics, whose knowledge rests on *a priori* principles of reason, seem to imply a kind of architectonic unity, even though they do not consider essential practical ends of reason.

to these passages, it seems that a body of cognitions can be considered systematic and scientific without taking into consideration the essential practical ends of human beings. Moreover, Kant seems to contradict himself when, in the *Architectonic*, he presents philosophy in its scholastic understanding as "a system of cognition that is sought only as a science" [*System der Erkenntniß, die nur als Wissenschaft gesucht wird*; KrV, A 838/B 866]. It seems that philosophy from a scholastic point of view could reach the status of science, even though, as we already know, it is only concerned with arbitrary ends (KrV, A 839n./B 867n.). However, if guidance from arbitrary ends can provide only technical unity, and if architectonic unity and a reference to the essential ends of reason are conditions of science, it seems to follow that philosophy according to its scholastic concept could not reach the status of science.[13]

If we understand architectonic unity as a system of cognitions organized according to the essential practical ends of reason, Kant evidently contradicts himself. He stresses that science needs architectonic unity and then designates as sciences some bodies of knowledge that seem to possess only technical unity. However, Kant gives us the means to understand architectonic unity (and thus the conditions of science) in a less demanding way (as not explicitly considering the essential practical ends of reason). Kant, in the *Architectonic of Pure Reason*, seems to endorse the more demanding definition of architectonic unity, but this is only due to the fact that here various levels of discourse are overlapped. Once we have distinguished this less demanding understanding of architectonic unity, it will both allow us to avoid the apparent contradictions we have recognized in Kant's statements and offer us a description of science and its systematic unity which will be more plausible and insightful. Moreover, as I will argue in section 5, this less demanding definition of architectonic unity will not prevent us from seeing practical philosophy as having priority within a true system of philosophy.

4 An Alternative Interpretation of Architectonic and Technical Unity

I will now present an alternative, less demanding understanding of the architectonic unity required of science and the corresponding notion of technical unity.

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13 La Rocca (2003, 221), Tonelli (1994, 272), Ypi (2011, 144), and Ferrarin (forthcoming: chap. 3) hold different positions on whether philosophy in the scholastic sense is architectonic or technical. See note 1.

As is well known, in the *Architectonic* Kant clarifies his conception of a system by comparing it to an animal body. Like an animal body, a system requires that the relationships between the parts are not accidental and arbitrary, but express a determinate idea of the whole by means of which the parts are related.

> I understand by a system, however, the unity of the manifold cognitions under one idea. This is the rational concept of the form of a whole, insofar as through this the domain of the manifold as well as the position of the parts with respect to each other is determined *a priori*. The scientific rational concept thus contains the end and the form of the whole that is congruent with it. The unity of the end, to which all parts are related and in the idea of which they are also related to each other, allows the absence of any part to be noticed in our knowledge of the rest, and there can be no contingent addition or undetermined magnitude of perfection that does not have its boundaries determined *a priori*. The whole is therefore articulated (*articulatio*) and not heaped together (*coacervatio*); it can, to be sure, grow internally (*per intus susceptionem*) but not externally (*per appositionem*), like an animal body, whose growth does not add a limb but rather makes each limb stronger and fitter for its end without any alteration of proportion.[14]

This description of the relationships obtaining between the parts of a system allows us to draw a distinction between technical and architectonic unity, which does not require the consideration of essential practical ends for the attainment of the latter. Thus, in architectonic unities we surely need an end of reason, but an end that is chiefly speculative, that is the formation of a system of cognitions in which every cognition relates to the others not as an arbitrary addition, but as part of a coherent and interrelated whole. In this whole the parts are somehow dependent on the very idea of the whole. This description of architectonic unity seems to grasp a very important character of scientific theories. For example, it is plausible to see the development of a new empirical science as resting on its capacity to form a coherent system of cognitions, organized in a hierarchical order of basic and resulting propositions. The various propositions of this empirical

14 Ich verstehe aber unter einem Systeme die Einheit der mannigfaltigen Erkenntnisse unter einer Idee. Diese ist der Vernunftbegriff von der Form eines Ganzen, so fern durch denselben der Umfang des Mannigfaltigen sowohl, als die Stelle der Theile untereinander *a priori* bestimmt wird. Der scientifische Vernunftbegriff enthält also den Zweck und die Form des Ganzen, das mit demselben congruirt. Die Einheit des Zwecks, worauf sich alle Theile und in der Idee desselben auch unter einander beziehen, macht, daß ein jeder Theil bei der Kenntniß der übrigen vermißt werden kann, und keine zufällige Hinzusetzung, oder unbestimmte Größe der Vollkommenheit, die nicht ihre *a priori* bestimmte Grenzen habe, stattfindet. Das Ganze ist also gegliedert (*articulatio*) und nicht gehäuft (*coacervatio*); es kann zwar innerlich (*per intussusceptionem*), aber nicht äußerlich (*per appositionem*) wachsen, wie ein thierischer Körper, dessen Wachsthum kein Glied hinzusetzt, sondern ohne Veränderung der Proportion ein jedes zu seinen Zwecken stärker und tüchtiger macht. (KrV, A 832f./B 860f.)

science should be seen as somehow dependent on the very idea of the system as a whole. In fact, this system should be able to predict empirical events which would occur under certain circumstances and these predictions should be part of a coherent and interconnected set of knowledge. Thus, the idea of a system of cognitions that are not arbitrarily arranged, but depend on the very idea of the whole in question, is essential to grasping scientific practice.[15]

The way in which different parts of a scientific discipline are related to one another presupposes that that very scientific discipline possesses a unity which is not only the summary of different proved propositions, but is the consequence of an articulated whole. In this sense the whole must precede the parts.[16] The parts must be seen as concurring in the realization of that aimed-at whole. However, it would be a mistake to interpret the priority of the whole to its parts as a temporal priority. In fact, as Kant affirms, even though we must see the idea of the whole as existing prior to the determination of the position of the parts, this does not mean that the idea of the whole should be clear from the very beginning. "But in the elaboration the schema, indeed even the definition of the science which is given right at the outset, seldom corresponds to the idea; for this lies in reason like a seed, all of whose parts still lie very involuted and are hardly recognizable even under microscopic observation".[17]

Thus, even though the idea of the whole should be given *a priori* by reason, it cannot be clear from the outset. The *a priori* character of the idea of the whole can here be understood in two ways. The idea of the whole is given *a priori* by reason because it is reason that requires a systematic connection between cognitions. However, this idea is only the regulative idea of a possible system, which does not

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15 Of course when Kant speaks of the priority of the whole to its parts in the sciences, he probably has apodictic sciences in mind (what he called proper sciences). In apodictic science, the whole of a science can be considered as given *a priori* insofar as these sciences collect cognitions of reason. In introducing this less demanding interpretation of architectonic unity we should thus keep in mind that Kant does not apply it to empirical sciences. That said, we can see how this concept of architectonic unity can be really helpful in understanding scientific practices broadly understood.

16 "This unity of reason always presupposes an idea, namely that of the form of a whole of cognitions, which precedes the determinate cognition of the parts and contains the conditions for determining *a priori* the place of each part and its relation to the others". (Diese Vernunfteinheit setzt jederzeit eine Idee voraus, nämlich die von der Form eines Ganzen der Erkenntniß, welches vor der bestimmten Erkenntniß der Theile vorhergeht und die Bedingungen enthält, jedem Theile seine Stelle und Verhältniß zu den übrigen *a priori* zu bestimmen. KrV, A 645/B 673)

17 Allein in der Ausarbeitung derselben entspricht das Schema, ja sogar die Definition, die er gleich zu Anfange von seiner Wissenschaft giebt, sehr selten seiner Idee; denn diese liegt wie ein Keim in der Vernunft, in welchem alle Theile noch sehr eingewickelt und kaum der mikroskopischen Beobachtung kennbar verborgen liegen. (KrV, A 834/B 862)

introduce any determinate concept of a whole. On the other hand, the idea of the whole is given *a priori* with respect to its parts, insofar as we must treat those parts as dependent on an idea of the whole that logically precedes them. Even in the case of empirical sciences, where we depend on empirical phenomena for the construction of a system of cognitions, we must treat those cognitions as following from an idea of the whole which is logically prior to them. The way in which we develop a theory about a peripheral phenomenon is always dependent on the relationship between this theory and a system of cognitions in which our theory will be included. Of course, one could claim that in empirical sciences we can say that the whole is prior to the parts, but not that it is given *a priori*. Only in apodictic sciences, insofar as they do not depend on empirical phenomena, but on reason, can we say that the whole is given *a priori*, even though the whole is only constructed and clarified in the course of inquiry. Here, the discovered whole is logically prior with respect to its parts, but it is also *a priori*, insofar as it collects *a priori* cognitions of reason. Kant thus limits the validity of this less demanding conception of architectonic unity to apodictic sciences. In fact, he stresses that only apodictic sciences are proper sciences (MAN, AA 04: 468). We can therefore read Kant's statement that in architectonic unities the whole is given *a priori* with respect to its parts as implying two claims: 1) the regulative idea of a possible whole is given *a priori* by reason; 2) the whole of a science (and precisely of an apodictic science) must be seen as logically prior to its parts.

This less demanding description of architectonic unity, which identifies the end given *a priori* by reason with a regulative search for systematicity in knowledge, and which depicts the whole of a science as logically prior to its parts, is not only a more plausible description of science than the more demanding one (according to which architectonic unity is only obtained thanks to a consideration of the essential practical ends of human reason), but it also gives us valuable insights into how to understand scientific practices.

But how should we account for technical unity as a counterpart of this less demanding description of architectonic unity? As we saw, Kant describes technical unity as a unity of cognitions which is sought "for all sorts of arbitrary and external ends" [*empirisch, nach zufällig sich darbietenden Absichten*; KrV, A 833/B 861].[18] Following this statement, it seems that the less demanding description of

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18 In the *First Introduction* to the *Critique of the Power of Judgment* Kant introduces a distinction between practical and technical propositions that is related to the conception of technical unity as a doctrine of skill. Practical propositions are propositions concerning essential moral matters, whereas technical propositions are theoretical propositions which "belong to the art of bringing about that which one wishes should exist" (sie gehören zur *Kunst*, das zu stande zu bringen, wovon man will, daß es seyn soll; EEKU, AA 20: 200).

architectonic unity here presented should also be a case of technical unity (in the more demanding sense). In fact, one might use mathematical or physical knowledge to serve any end one might wish. However, we can understand technical unity in an alternative way and use this latter understanding as the counterpart of the less demanding description of architectonic unity we have just identified.

In the *Critique of the Power of Judgment,* Kant describes technical and architectonic unities as follows:

> Every science is of itself a system; and it is not enough that in it we build in accordance with principles and thus proceed technically; rather, in it, as a freestanding building, we must also work architectonically, and treat it not like an addition and as a part of another building, but as a whole by itself, although afterwards we can construct a transition from this building to the other or vice versa.[19]

Architectonic unity is thus distinctive because it builds an independent and freestanding system. By contrast, collections of cognitions that contain technical unity "base their doctrines on auxiliary propositions (*lemmata*), i.e., they borrow some concept, and along with it a basis for order, from another science" [*legen ihren Lehren Lehnsätze (*Lemmata*) zum Grunde; d.i. sie borgen irgend einen Begriff und mit ihm einen Grund der Anordnung von einer anderen Wissenschaft*; KU, AA 05: 381]. We should not take this proposition too strongly. Certainly, physics does use mathematical concepts, but this does not mean that it has only technical unity. What is at issue here is that the concepts that technical unity borrows are not internal parts of a science. In physics, mathematical concepts are an essential component of that very system, and they cannot count as an arbitrary introduction. In the passage from the third *Critique* just quoted, Kant uses the distinction between architectonic and technical unity in order to argue that the principle of a teleology of nature is an internal principle of natural science, without which we could not for example account for organisms (KU, AA 05: 381ff.). It is not a principle which is arbitrarily introduced into a body of knowledge. As an example of this arbitrary introduction, Kant indicates the utilization of the concept of God as an explanatory concept of natural science (KU, AA 05: 381).

We can thus interpret technical unity as a body of knowledge in which the parts of a system are not dependent on the idea of a whole of knowledge as their origin. These parts can be arbitrarily introduced into the system in order to pro-

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19 Eine jede Wissenschaft ist für sich ein System; und es ist nicht genug, in ihr nach Principien zu bauen und also technisch zu verfahren, sondern man muß mit ihr, als einem für sich bestehenden Gebäude, auch architektonisch zu Werke gehen und sie nicht wie einen Anbau und als einen Theil eines andern Gebäudes, sondern als ein Ganzes für sich behandeln, ob man gleich nachher einen Übergang aus diesem in jenes oder wechselseitig errichten kann. (KU, AA 05: 381)

vide explanations (as in the example of the concept of God for natural science) and this of course would not be any example of science. We can also think of the different branches of engineering. This discipline uses principles and concepts coming from various sciences in order to develop different tools, which serve equally different purposes. It is not necessary that the development of these tools contribute to the formation of a unitary system of knowledge.[20] Rather, the unity displayed by engineering sciences is dependent on the fact that the different tools they provide are used for similar purposes.[21] They can thus borrow knowledge from other sciences insofar as it is useful for the realization of these purposes. It must be noted that, in this latter example, what identifies technical unity is not the fact that it serves arbitrary ends (this would be easily confused with the first description of technical unity we have introduced, according to which technical unity is distinctive because it serves arbitrary ends), but the fact that those ends, as a principle of unity of a discipline, are external to that very system of knowledge. For example in physics we could regard the relationship between propositions concerning matter and energy as displaying an internal relationship between the parts of a system of knowledge, so that these parts are somehow dependent on the very idea of that system. By contrast, if for example we consider civil engineering, the way in which propositions of physics are applied to construction techniques does not depend on an internal relationship between these propositions as parts of a whole of knowledge. Rather, their unity is dependent on the purpose they might serve: e.g. the construction of a bridge, a building, etc.[22]

We should thus understand architectonic unity in the less demanding sense presented here as identifying the end given *a priori* by reason with a regulative search for systematicity in knowledge and depicting the parts of a science as somehow logically dependent on the idea of the whole of that science. By contrast, in technical unity the parts of a system are by no means dependent on the idea of a whole of knowledge. We should now consider whether this de-

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20 It is so plausible to see engineering as not aiming at a construction of a system of knowledge where we seek the greater possible interrelation between the parts of a whole. As far as the relationship between the parts of the discipline is concerned, engineering would of course be required to avoid contradictions.

21 This difference could maybe be expressed by saying that in architectonic unity the construction of a whole of knowledge is an end in itself, whereas in technical unity every interconnection of knowledge is subordinated to different ends and thus the attainment of a true system is not required.

22 It could seem paradoxical to use civil engineering as an example of technical unity. After all, the model of architectonic unity is the construction of a building. However, considering a single building as realizing a plan, in which the parts of that building must contribute to its very existence, is different from referring to civil engineering as a scientific discipline.

scription of architectonic unity, which surely suits Kant's attempt to give a goal-oriented account of science, is also able to sustain his attempt to stress the priority of practical philosophy within a true system of philosophy.

5 Philosophy and the Relations of Reason to Ends

It is evident that Kant introduced the more demanding definition of architectonic unity as a means to support the priority of a certain understanding of practical philosophy within a true system of philosophy. In this sense, only practical philosophy can be responsible for the architectonic unity of philosophy, insofar as it takes into explicit consideration the essential practical ends of reason. However, we have already seen how the more demanding definition of architectonic unity is problematic as a condition of scientificity. To overcome this latter difficulty I have shown how Kant also presented a less demanding definition of architectonic unity which does not require a consideration of the essential practical ends of human reason. I should now consider whether the endorsement of this latter definition of architectonic unity as a condition of science compromises Kant's attempt to stress the priority of practical philosophy within a true system of philosophical doctrines.

I have stressed that architectonic unity should be understood as a system of knowledge, where the parts of a science are somehow logically dependent on the idea of the whole of that science. It is so evident that in this sense architectonic unity can only be understood as a theoretical or speculative end of reason. So, if we apply this concept of architectonic unity and scientificity to philosophy, it seems at first sight that there is no reason to consider practical philosophy as having any kind of priority. Theoretical philosophy could be seen as building a science of its own without the need to consider practical matters. What is more, practical philosophy, when it is understood according to a purely scholastic concept, would not need to consider essential practical ends of reason to reach unity and scientificity (it would only need to identify commanding moral laws). We would thus have no reason to see one as having priority over the other. This seems to be confirmed if we look to Kant's definition of the scholastic concept of philosophy. The latter is "a system of cognition that is sought only as a science without having as its end anything more than the systematic unity of this knowledge" [System der Erkenntniß, die nur als Wissenschaft gesucht wird, ohne etwas mehr als die systematische Einheit dieses Wissens; KrV, A 838/B 866]. If architectonic unity only requires the systematic arrangement of our cognitions, it seems that we have no need to go beyond philosophy in its scholastic concept to attain scien-

tificity. Philosophy could thus become a science without considering the essential practical ends of reason and Kant's attempt to stress the priority of a certain understanding of practical philosophy within a true system of philosophy would be in jeopardy.

However, we should not jump to simple conclusions and should analyse the matter more closely. If we do so, it is easy to see how philosophy cannot ever reach the status of a scientific system if it neglects practical matters and if it lacks guidance from a "cosmic" understanding of practical philosophy. In fact, one of Kant's main theses is that the reason why we try to prove the truth of some theoretical propositions concerning transcendent ideas lies in some essential practical interests. I will only mention two examples. In the chapter on the *Antinomy of Pure Reason,* Kant notices how the propositions of the thesis manifest:

> [...] a certain practical interest, in which every well-disposed person, once he understands its true advantage to him, heartily shares. That the world has a beginning, that my thinking self is of a simple and therefore incorruptible nature, that this self is likewise free and elevated above natural compulsion in its voluntary actions, and finally, that the whole order of things constituting the world descends from an original being, from which it borrows all its unity and purposive connectedness – these are so many cornerstones of morality and religion.[23]

The relevance of practical interests for the attempt to prove theoretically the truth of some propositions is also stressed in the *Canon of Pure Reason.* Here, Kant claims: "If, then, these three cardinal propositions [the will is free, the soul is immortal, and God exists, *my note*] are not at all necessary for our knowing, and yet are insistently recommended to us by our reason, their importance must really concern only the practical".[24] According to Kant, there are therefore theoretical questions that are pursued for their practical relevance. Our theoretical inquiries are thus motivated by our practical interests. We should also keep in mind that, for Kant, it was the dogmatic attempt to answer, from a chiefly theoretical and speculative perspective, questions about God, the immortality of the soul, and

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23 *Zuerst* ein gewisses *praktisches Interesse*, woran jeder Wohlgesinnte, wenn er sich auf seinen wahren Vortheil versteht, herzlich Theil nimmt. Daß die Welt einen Anfang habe, daß mein denkendes Selbst einfacher und daher unverweslicher Natur, daß dieses zugleich in seinen willkürlichen Handlungen frei und über den Naturzwang erhoben sei, und daß endlich die ganze Ordnung der Dinge, welche die Welt ausmachen, von einem Urwesen abstamme, von welchem alles seine Einheit und zweckmäßige Verknüpfung entlehnt: das sind so viel Grundsteine der Moral und Religion. (A 466 B 494)

24 Wenn demnach diese drei Cardinalsätze uns zum Wissen gar nicht nöthig sind und uns gleichwohl durch unsere Vernunft dringend empfohlen werden: so wird ihre Wichtigkeit wohl eigentlich nur das Praktische angehen müssen. (KrV, A 799 f./B 827 f.)

freedom, that caused the impossibility of addressing these problems from their proper practical standpoint (KrV, B XXIVf., XXX).

Thus if, on the one hand, practical interests seek support from theoretical investigations, then, on the other hand, some of our theoretical inquiries can only find a solution through practical considerations. Theoretical and practical philosophy are thus essentially interwoven, and they cannot reach consistency and unity (as coherent systems in their respective domains) in isolation from one another.[25] What is more: the reason why practical philosophy asks the help of theoretical philosophy and vice versa is that only in this way can they further the essential practical ends of reason. It is thus only an explicit focus on these essential ends that can give philosophy the possibility of attaining scientific unity. As the *Canon of Pure Reason* shows, in theoretical philosophy we seek to warrant the assumption that a satisfaction of our essential practical ends and the realization of the highest good are possible. Kant claims that the existence of God and the immortality of the soul are necessary for such a possibility to be real. At this point, the necessity of the moral law and the necessity of regarding the highest good as at least possible give us indirect access to the theoretical consideration of the transcendent ideas. Kant accordingly claims "the third question, namely, 'If I do what I should, what may I then hope?' is simultaneously practical and theoretical, so that the practical leads like a clue to a reply to the theoretical question and, in its highest form, the speculative question".[26] The only way in which, within philosophy, theoretical and practical concerns can get support from one another without resulting in insoluble contradictions is by means of actual guidance from practical philosophy, the latter understood according to its "cosmic" concept. Only a philosophy that, in its practical part, actually considers the essential practical ends of reason can thus reach scientific unity and establish a coherent relationship between its practical and theoretical domains. Accordingly, Kant claims that the unity of reason, which philosophy should somehow exemplify, "is given in itself

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25 This could strike someone as unorthodox. Kant is usually considered a philosopher who sharply separates the domains of theoretical and practical philosophy. The interpretation defended in this paper does not argue that theoretical and practical philosophy should not be separated, but only that they must always be considered in their relationship. If we do so, it is possible to distinguish which philosophical problems belong to one or the other domain. In this sense, metaphysics in the narrower sense, that is the metaphysics of nature, even though it has a relative independence from the metaphysics of morals, cannot become a science without clarifying its place within the complete system of philosophy, or better, within metaphysics in the broader sense (cf. KrV, A 841f./B 869f.).

26 Die dritte Frage, nämlich: wenn ich nun thue, was ich soll, was darf ich alsdann hoffen? ist praktisch und theoretisch zugleich, so daß das Praktische nur als ein Leitfaden zu Beantwortung der theoretischen und, wenn diese hoch geht, speculativen Frage führt. (KrV, A 805/B 833)

through the final intention of pure reason in the practical" [*ist für sich durch die Endabsicht [der reinen Vernunft] im Praktischen gegeben*; KrV, B XXXVIII).

If we bear all this in mind, it is obvious that for Kant philosophy could not reach the status of a system (and thus become a science) without also taking into consideration the essential practical ends of reason. The aim of constructing a system is surely speculative, and the architectonic unity required by a science identifies a theoretical and speculative condition. Disciplines like mathematics and physics must attain architectonic unity in order to become sciences. This condition, according to the less demanding sense of architectonic unity I have previously identified, does not require that we take into consideration practical and moral ends. Thus, it is certainly possible to attain architectonic unity, and thus become a science, without considering the essential practical ends of humankind. However, it is philosophy that cannot reach architectonic unity, and thus scientificity, without taking into consideration essential practical ends.[27] This is so because both theoretical and practical philosophy continuously seek reciprocal support in order to warrant the belief that our most essential practical ends can be satisfied. In this picture, practical philosophy, which is the part of philosophy that directly considers the practical essential ends of reason, thus has priority within a true system of philosophy. In fact, it is only practical philosophy that could allow us to grasp these practical essential ends, and the latter are the key to building a coherent and scientific system of philosophy.

It is thus probable that when Kant, in the *Architectonic*, uses the more demanding conception of architectonic unity, he has not a condition of science as such in mind, but rather a condition of scientificity for philosophy. It is a characteristic of the very subject-matter of philosophy that explains why it cannot build a coherent architectonic system without taking into consideration how theoretical and moral philosophy are essentially connected in their attempt to further our essential practical ends. It is therefore philosophy, as a particular discipline, that cannot reach scientificity without taking into account the essential practical ends of humankind. Philosophy as a science can be successful only according to its cosmic concept, not in its scholastic sense.[28]

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27 The question whether the unity of philosophy in its scholastic concept is architectonic or technical is thus misleading (see note 1 and 12). Philosophy according to its scholastic understanding, as an inquiry that neglects our essential practical interests, is deemed to be unsuccessful in the pursuit of becoming a science. This is so because its attempt to prove theoretically transcendent ideas and to provide a metaphysical basis for moral principles is condemned to fall into fatal contradictions.

28 This does not mean that, within philosophy, we cannot develop single arguments by following a scholastic understanding of philosophy. The transcendental deduction of the categories,

We can therefore identify architectonic unity as a theoretical and speculative aim of reason that teaches us how to build scientific systems. According to this aim, the parts of scientific systems must be able to be considered as somehow dependent on the idea of the whole. The sciences (and here Kant means apodictic sciences insofar as only apodictic sciences could claim that the whole they find is *a priori*) deserve this name because they posses this kind of unity. This description of architectonic unity as a theoretical aim of reason and as a condition of scientificity does not prevent us from stressing that philosophy cannot reach scientificity without considering essential practical ends. This latter fact is explainable thanks to the very subject-matter of philosophy, where it is not possible to address the relationship between theoretical and moral issues successfully without questioning our essential practical interests. Philosophy can thus reach scientificity only by taking into explicit consideration the essential ends of reason, which are chiefly practical.

By following this account of architectonic unity and of the requirements for attaining this unity in philosophy, we can also better understand the role of philosophy within a complete system of human knowledge. Philosophy can only attain architectonic unity if it explicitly considers our essential practical ends from the standpoint of moral philosophy. However, the actual consideration of these essential ends also seems to be a condition of architectonic unity in the complete edifice of human knowledge. Accordingly, Kant argues: "Mathematics, natural science, even the empirical knowledge of humankind, have a high value as means, for the most part to contingent but yet ultimately to necessary and essential ends of humanity, but only through the mediation of a rational cognition from mere concepts, which, call it what one will, is really nothing but metaphysics".[29] That means that only philosophy, as an immanent part of this complete system of knowledge, can provide the idea of the whole, which keeps the parts together. This idea of the whole is given by philosophy according to its cosmic concept, and so by reference to the essential ends of reason. However, that does not mean that individual sciences cannot attain architectonic unity, and thus scientificity, inde-

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for example, can be considered a valid philosophical argument even though it does not take into consideration essential practical ends. However, it is philosophy as a whole, as a complete system of philosophical cognitions, that cannot reach scientificity if it is not developed according to its cosmic concept.

29 Mathematik, Naturwissenschaft, selbst die empirische Kenntniß des Menschen haben einen hohen Werth als Mittel größtentheils zu zufälligen, am Ende aber doch zu nothwendigen und wesentlichen Zwecken der Menschheit, aber alsdann nur durch Vermittelung einer Vernunfterkenntniß aus bloßen Begriffen, die, man mag sie benennen, wie man will, eigentlich nichts als Metaphysik ist. (KrV, A 850/B 878)

pendently from this complete system of knowledge and from their relationship with philosophy. As I have argued, they can reach an architectonic unity of their own, and thus scientificity. It is only if we consider their relationship with the other sciences within a complete system of human knowledge that we need to take into consideration the essential practical ends of reason, as they are identified in moral philosophy. As with philosophy, the requirement to consider these ends in order to attain architectonic unity in a complete edifice of science is not something that has to do with the conditions of architectonic unity per se, but with the peculiar characteristics of the system we are taking into consideration.

6 Conclusion

In this paper I have argued that the consideration of the ends of reason has a crucial role in the *Architectonic* chapter of the *Critique of Pure Reason*. Kant uses the relation of reason to ends both to define science as a goal-directed activity aiming at the construction of a system and to stress the priority of a certain understanding of practical philosophy within a true system of philosophy. The latter priority is justified insofar as only practical philosophy takes into consideration the essential ends of reason. The overlap of these two aims sometimes led Kant to propose a rather implausible definition of architectonic unity as a condition of science, where architectonic unity would only be possible thanks to an actual consideration of the essential practical ends of human reason. This latter claim generates various difficulties in Kant's position, insofar as disciplines like physics and mathematics could not be considered sciences and only philosophy could reach this status.

In order to solve the latter problem I have shown how Kant also proposed an alternative definition of architectonic unity. This unity is derived from a theoretical end given by reason, according to which we seek to build a system where the parts of a science are somehow dependent on the idea of the whole. This definition of architectonic unity is more plausible as a condition of science and it also helps us better to understand our scientific practices. Moreover, it does not contrast with the other aim Kant pursues in the *Architectonic*: that is, the attempt to prove the priority of practical philosophy within a true system of philosophy. It is the peculiar subject-matter of philosophy which does not allow for the achievement of scientificity in this discipline without taking into consideration the essential practical ends of human reason. Thus, it is only for philosophy that it is mandatory to consider the essential aims of reason, identified in practical philosophy, in order to reach architectonic unity and to become a science. This does not prevent

us from considering architectonic unity as a condition of scientificity which does not require the consideration of essential practical ends.[30]

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