Kant Yearbook

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The *Kant Yearbook* is an international journal that publishes articles on the philosophy of Immanuel Kant. Each issue is dedicated to a specific topic. Each annual topic will be announced by way of a call for papers (the deadline for submissions to each annual volume is approx. Mai/ June of the preceding year). The Editorial Board of the *Kant Yearbook* is composed of renowned international experts, and selects papers for publication through a double blind peer review process.

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Preface

Over the last decade, academic research on Kant has grown to an extent that makes it almost impossible even for the well informed expert to ori entate herself in a specific domain of his philosophy. Be it monographs, articles, textbooks, anthologies, text editions or translations, the num bers of publications have steadily risen in all areas concerned with Kant's philosophy. This goes not only for European countries and, in particular, the United States, but equally for South America, especially for Argentine and Brazil. The growing interest in Kant's philosophy in countries like Russia or China, and Asia as a whole, is already begin ning to add substantially to this development. The *Kant Yearbook* is a re sponse to the international increase of the research on Kant's philoso phy. It is the *Kant Yearbook*'s intention to create a forum for the themati cally focused and innovative discussion of special topics in Kantian phi losophy on an international scale. For this reason, its preferred languages of publication are English and German. There already is, of course, a number of excellent journals dedicated to Kant such as the *Kant-Studien*, *Studi Kantiani*, or the *Kantian Review*. However, the *Kant Yearbook* is fundamentally distinct from these journals in that it publishes topic re lated annual volumes. Each annual topic will be announced by way of a call for papers. In order to ensure the scholarly quality of the contri butions, the editorial board of the *Kant Yearbook*, composed of re nowned international experts, will select papers for publication through a double blind peer review process. The format as an annual journal will thus allow the *Kant Yearbook* to react to current developments in re search on Kant's philosophy within a short period of time, and to ini tiate new research topics and directions. Ideally, each issue will represent the state of the art regarding its specific topic. The *Kant Yearbook* there fore equally welcomes historical and systematic articles, no matter from what philosophical school or orientation. The present first issue on Kant's teleology seems to be a successful example of that strategy. Com pared to the first and second *Critiques* this topic has traditionally been understudied. Nevertheless, recent historically as well as systematically orientated developments in this research area document a growing in terest in the often neglected "Critique of Teleological Judgment". The topic of the second issue of the *Kant Yearbook* in 2010 will be

"Metaphysics" followed by "Anthropology" and "Kant and Analytic Philosophy".

I would like to thank the members of the editorial board who unhesitatingly accepted my invitation to take on the difficult task of reviewing submissions and selecting papers for the *Kant Yearbook*. I am also very grateful to my former colleagues, in particular to Chris Eliot, from the Department of Philosophy at Hofstra University (New York) for supporting me in starting the *Kant Yearbook*. I thank my new colleagues at the Department of Philosophy at the University of Luxembourg for the friendly welcome they have extended to the *Kant Yearbook*. Special thanks go to the publisher De Gruyter and its editor in chief, Dr. Gertrud Grünkorn, for taking on the risky project of starting a new journal. And last but not least, thanks go to Christoph Schirmer and Claudia Hill from De Gruyter for helping me with the editorial work.

Luxembourg, February 2009 Dietmar Heidemann

Contents

Kant's Characterization of Natural Ends

Claus Beisbart

Abstract

What is it to judge something to be a natural end? And what objects may properly be judged natural ends? These questions pose a challenge, because the predicates "natural" and "end" seemingly can not be instantiated at the same time—at least given some Kant ian assumptions. My paper defends the thesis that Kant's "Critique of the Teleological Power of Judgment", nevertheless, provides a sensible account of judging something a natural end. On the account, a person judges an object O a natural end, if she thinks that the parts of O cause O and if she is committed to approach O in a top down manner, as if the parts were produced in view of the whole. The account is non realist, because it involves a commitment. With the account comes a characterization that provides necessary and sufficient conditions on objects that may properly be judged natural ends. My paper reconstructs the argument in the "Critique of the Teleological Power of Judgment", §§64–65 where the account and the characterization are derived.

1. Introduction

In his "Critique of the Teleological Power of Judgment", Kant deals with teleological judgments. Teleological judgments may be identified via particular teleological terms that appear in natural linguistic expres sions of the judgments. Such teleological terms include "purpose/end"[1], "purposive" and "for the sake of". Kant's aim in the "Critique of the Teleological Power of Judgment" is to analyze teleological judgments, to make a case for them, and to sort out a confusion that Kant thinks accompanies teleological judgments.

Kant's focus is mostly on teleological judgments that concern *prod- ucts of nature* or *natural objects*, for short. This is so, because Kant diagno ses that teleological judgments are made in the natural sciences, which deal with natural objects. On Kant's view, it is even necessary to employ

1 I will take "end" and "purpose" to be synonymous in this paper. Following the Cambdridge edition, I will stick to "end".

teleological notions for investigating certain natural objects (§65/375 6/247, e.g.).[2]

In Kant's discussion, the notion of *judging something a natural end* and the notion of a *natural end* play an important role. In order to understand the importance of these motions, we may say the following: Whenever we make a teleological judgment regarding what we judge to be natural, then we implicitly judge an object to be a natural end.

However, to judge something a natural end does not quite seem to make sense, at least if some Kantian assumptions are taken for granted. For, if some thing is a natural *end*, it seemingly is the result of intentional agency. But a natural end is also supposed to be *natural*, i.e. a product of nature (§64/370/242), and a product of nature has its origin in nature, which does not, for Kant, include intentional agency. To judge some thing a natural end thus seemingly amounts to affirming two inconsis tent propositions. Kant himself notices that an air of contradiction at taches to the notion of a natural end (§64/370/242).

Ginsborg (2001, 2006) has pointed out this problem with great force. She writes:

> We count something as an end if we regard it as produced by the causality of a concept, which implies that it was produced as a result of design. But something counts as natural, on the face of it, precisely to the extent that it is not the product of design, and hence, it would seem, not an end. One of the most important philosophical challenges for any sympathetic interpre tation of Kant's views on organisms is to explain how this apparent contra diction is to be reconciled" (Ginsborg 2006, 457).

It is my thesis in this paper that Kant offers a solution to the problem that Ginsborg points out. Kant derives the solution in what I take to be a central part of the Analytic of the "Critique of the Teleological Power of Judgment", viz. in §§64 65.[3] On the face of it, these sections are concerned with conditions on objects that may be qualified as nat ural ends in Kant's own words, he is concerned with the character of natural ends (§64/369/242 and §65/372/244). In slightly more appro priate terms (see section 2 below for details) we may say, Kant achieves two separate, but related tasks: 1. He puts forward an *account of judging*

2 Page references are to the sections in Kant's third Critique, the edition of the Prussian Academy, vol. V and the Cambridge edition (Kant 2000), respectively. Page references to Kant's first Critique mention the page in the edition of the Prussian Academy, vol. III or IV and in the Cambridge edition.

3 Cf. McLaughlin (1990, 47) who calls §65 "the central section of the Analytic".

something a natural end. 2. He provides a *characterization of the objects that may properly be called natural ends*.

In order to argue for my claims, I will offer a close reading and a sympathetic reconstruction of the argument in §§64 65. I am speaking of a reconstruction, because I will dismiss some details of Kant's argu ments; also, my reconstruction uses a few terms that are not borrowed from Kant. Still, the focus is on Kant's views. Note also that I do not want to commit myself to Kant's understanding of natural ends or of the related judgments.

As Ginsborg (2001, 232) points out, the problem has not been much considered in the literature. Ginsborg herself offers a solution on behalf of Kant. According to it (see particularly Ginsborg 1997 and 2001, 248 253), to judge some object O a natural end is to judge it to be nat ural, but at the same time to judge it to be subject to internal standards of evaluation. This does not seem inconsistent, as we do in fact call nat ural products unhealthy or malfunctioning. However, Ginsburg's solu tion does not rest on a reconstruction of what I take to be the most rel evant passage. Rather, in her own words, it is "pieced together" from the whole "Critique of the Teleological Power of Judgment" (Gins borg 2006, 464). Although I find Ginsborg's solution very interesting, I do not think that it is Kant's solution. Apart from Ginsborg's work, McLaughlin (1990) and Zuckert (2007) will be important for my paper.

My study is obviously limited in some ways. I concentrate on Kant's development of the very notion of judging something a natural end and his characterization of natural ends. The program of Kant's third Cri tique, the Dialectic in the "Critique of the Teleological Power of Judg ment" and teleology in Kant's philosophical system are not my topic.[4] Given the importance of the notion of a natural end and given the dif ficulties of the text in §§64 65, my focus seems legitimate.

My argument proceeds in the following steps. In section 2, I will briefly examine Kant's approach to teleology. For getting clear on Kant's argument, it is useful to comment on his general notion of an end (section 3). In section 4, I will give an overview over the structure

4 See Düsing (1986) for a study on teleology and Kant's notion of a world; McLaughlin (1990) for Kant's "Critique of the Teleological Power of Judg ment" and biology; and Zuckert (2007) for a recent interpretation of the whole third Critique. Guyer (2003) provides a collection of critical essays on Kant's third Critique. Guyer (2001) traces the further development of Kant's thoughts on natural ends and teleology in the Opus postumum.

of Kant's argument in §§64–65. My reconstruction and discussion of Kant's main argument can be found in section 5. I provide a few discussion points in section 6.

2. Kant's approach to teleology

Kant approaches the topic of teleology in terms of the teleological power of judgment or teleological judgment. His starting points are teleological judgments rather than purposes or ends themselves. His approach is cautious, for it does not presuppose a realist construal of the judgments under scrutiny. *Realists* take judgments to the effect that something is a natural end as assertions of matters of fact or as *factual*, for short, just as the surface structure of related linguistic statements "X is a natural end" suggests. They think that such assertions can hold true in a mind independent way and do sometimes do so. Kant's approach, instead, leaves the possibility that the judgments may involve subjective components such as feelings or commitments.

Kant's approach comes also with a drawback in that it makes things very complicated to put. Instead of saying that "natural end" means this or that, e.g., Kant has to say that to judge something a natural end amounts to this or that. As I will sometimes say, the central notions such as "end" appear in *judgment brackets*.

Fortunately, in this study, judgment brackets can often be dropped – and this is also what Kant does. Judgment brackets can be dropped, if we are dealing with judgments that we know allow a realist construal. The reason is this: Assume we are to explain what it is to judge something F, where "F" stands for a linguistic expression. Suppose, furthermore, that the judgment is factual and thus intended as assertion. Now we know quite generally what it is to *assert* that something obeys a predicate. Therefore, in order to fully understand what judging something F is, we need only understand the meaning of "F". We only need to carry out a conceptual analysis of F; we may reason like "to be F means to have G"; and this amounts to dropping judgment brackets. Following Kant, I will often do this, unless the brackets are crucial.

Let me now turn to what Kant thinks is the central teleological judgment – the judgment to the effect that something is a natural end. What is it to judge something a natural end? Well, the *obvious answer* is: to judge it a product of nature, or natural; and to judge it an end (for the purposes of this paper, an object counts as natural if and only

if it is a product of nature). Kant supports the obvious answer he equa tes judging something a natural end with "to judge something that one cognizes [and thus judges] as a product of nature at the same time an end" (§64/370/242). In fact, I think, any account of the related judg ments must develop the obvious answer.

The obvious answer does not suffice, because it does not specify how both judgments the judgments that something is an end and that it is natural are to be thought of. The easiest specification in this respect is to take both judgments as factual. This, then, is the *realist suggestion:* To judge something a natural end is to *assert* that it is an end and to *assert* that it is natural. "Natural end" would then function as a one place predicate, it would pick a class of objects of which the pred icate holds true, and that class of objects may be *characterized* by necessary and sufficient conditions by conditions, maybe, that bring out more clearly what kinds of things qualify as natural ends.

The realist suggestion, of course, does not work, because, under some assumptions, to assert that something is natural and to assert that it is an end is to affirm propositions that contradict each other. That is the problem pointed out by Ginsborg.

But at this point the cautious approach that starts with judgments may pay off, because we can drop realism. For instance, one may suggest that to judge something a natural end does not mean to *assert* that some thing is an end. Rather, maybe, to judge object O a natural end is to assert it to be natural and to merely *regard* it as end (Ginsborg 2001, 236 and Ginsborg 2006, 459). As Ginsborg points out this move does not help, because to regard some O that is asserted to be natural, as end seems to commit one to *regard* two propositions as true that contra dict each other viz. the proposition that something is natural and the proposition that it is an end and this does not make sense, again (for details see ibid.).

An alternative approach suggests that judging something a natural end amounts to assert it to be natural and to assert it to be *very much like an end* (Ginsborg 2001, 237). But, as Ginsborg rightly emphasizes, this account does not solve the problem, either, unless the respect is specified in which the object that is judged a natural end is very similar to an end.

It therefore seems that we do not make any progress unless we think more about the notion of an end. I will therefore turn to Kant's notion of an end. Note, anyway, that even on a non realist account of judging something a natural end, there remains a task of *characterizing natural*

ends. This time, the characterization will not pick the objects that are really natural ends, but rather the objects that may properly be judged natural ends for not every object will properly be judged a natural end. Necessary and sufficient conditions should be given conditions, maybe, that bring out more clearly what real world objects may prop erly be judged natural ends. Since there is still the task of characteriza tion even on a non realist view, there will be much talk of objects as natural ends in Kant and in this paper.

3. Kant's notion of an end

Kant takes "is an end/is a purpose" ("ist ein Zweck") to denote a one place predicate. An example of how Kant conceives of this predicate is this: If X is a thing that an agent has intentionally produced, then X may be called an end.[5] For the purposes of this section, judgments to the ef fect that something is an end can be taken as factual; we will therefore consistently drop judgment brackets.

Kant's first definition of end/purpose in the Critique of the Aesthet ic Power of Judgment (CAJ) reads:

> […] an end is the object of a concept [i.e. an object that falls under a con cept] insofar as the latter [the concept] is regarded as the cause of the former [the object] (the real ground of its possibility) (§10/220/105).[6]

According to the definition, O is an end if and only if the concept under which O falls, call that C(O), is the cause of O. If O is an end, its orig ination or its persistence and stability in time may thus be visualized by the following diagram, where the dashed arrow depicts causation.[7]

Very shortly after the first definition quoted above, Kant suggests that C(O) is not the cause of O, but rather the "determining ground

5 See McLaughlin (1990, 38–39) for a useful discussion of Kant's notion of end/ purpose.

6 In this passage, Kant is not quite consistent with his use of judgment brackets. The definiens has brackets, the definiendum does not, which does not quite make sense, literally taken.

7 At first sight, the statement "A is the cause of object O" will probably be taken to mean that A accounts for O's origin. However, there is also the possibility that A accounts for the persistence and stability of O in time. A few examples of Kant point into the latter direction (§64/371–372/243–244), and it may be argued that Kant's account of natural ends is more convincing, if it concerns the stability of an object rather than its origin.

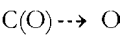

Diagram 1: Kant's first definition of something being an end in §10.

of its cause" (§10/220/105). Later, in the "Critique of the Teleological Power of Judgment", concerning ends, he speaks of causes "whose pro ductive capacity is determined by concepts" (§64/369 70/242). Else where (§65/373/245 and, maybe, §63/366 7/239), Kant seems to as sume that, in ends, the concept determines the *causality* of the cause.

All this suggests that Diagram 1 only captures what may be called Kant's first shot in defining ends. If we take into account the other quo tations, we end up with a more *elaborate definition*. On that definition, O is an end, if the concept C(O) determines the cause of O, and the de termination concerns O's cause only in so far as the cause causes O. That can be illustrated with the following diagram, where the arrow with the solid line denotes causation and the double arrow denotes the relation "being the determining ground of", or determination, for short:

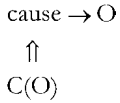

Diagram 2: Kant's elaborate definition of something (O) being an end.

In order to illustrate how the elaborate definition and Diagram 2 work, we may consider the following example: If Peter carves a flute, then his will (or his moving the arms in particular ways) causes the flute (O), but his will (his moving the arms) is determined by Peter's conception of the flute (C(O)).

Note that, in both definitions, the concept is a concrete representa tion of an object in someone's mind, not something like the general concept of a chair, say. That this is Kant's understanding is clear form the fact that Kant speaks of a will very shortly after his definition of ends in §10 (220/105).

An important question is what the determination relation in the elaborate definition is supposed to be. Kant does not explain that rela tion here, and, therefore, we just have to take Kant's words and work with the everyday understanding of "determination".

The elaborate definition is compatible with Kant's first shot, if both definitions use "causation" in slightly different senses. This has already been indicated by using different arrow types in the diagrams. In the first shot (Diagram 1), "causation" it to be understood in a very

broad sense. On this understanding, a cause of O is something that an swers why questions regarding O (cf. Aristotle's notion of a cause in Metaphysics I.1, 1.980a b). In the second definition (Diagram 2), on the contrary, Kant refers to efficient causes and the notion of causality that figures in modern science. That, I take it, is the notion of causality that Kant has dealt with in the first Critique. My suggestion to disam biguate Kant's use of "cause" is not merely ad hoc, because, in the third Critique, there are places in which Kant clearly seems to use "cause" in the narrow sense (§63/366 7/239, e. g.) and there are other places in which a broader understanding seems more fitting (§61/359/233).

Diagram 2 may also be used for defining the notion "for the sake of". That notion will later be used by Kant. In the diagram, we can say that the cause exists for the sake of O. That is more vivid from the following example (cf. §65/372/244): Suppose that Daisy builds a house for the sake of money. If Daisy succeeds, the house in a sense causes the money (the rents). Additionally, the house is determined by Daisy's conception of the money. That yields Diagram 2 with the house being the cause. Kant's discussion of the "connection of final causes" suggests that he understands "for the sake of" in this way (ibid.).[8]

In order to complete the discussion of Kant's notion of an end, I have to comment on yet another general trait in Kant's discussion of ends. In Kant's first definition of an end in §10 and the related com ments, there is much talk about necessary conditions. For instance, im mediately after his definition of an end, Kant says:

> Thus where not merely the cognition of an object but the object itself (its form or its existence) as an effect is thought of as possible only through a concept of the latter, there one thinks of an end. (§10/220/105).

Here, the "where" clause obviously contains a strengthening of the def iniens in Kant's definition of an end, contained in judgments brackets

8 Admittedly, there is a problem with my reading of "for the sake of" on Kant's behalf. At some point, Kant (§65/373–4/245–6) stresses the following: 1. The parts of a watch exist for the sake of the other parts. 2. That does not yet imply that the parts cause the parts. Under my reading of "for the sake of", both points seem wrong. But I do not see any other way how to define "for the sake of", given Kant's notion of an end. Independently from Kant's notions, I would deny that the parts of a watch exist for the sake of the other parts. They only exist and work for the sake of the whole. If the first point is wrong, then Kant would have no reason to stress his second point, either.

the concept C(O) is supposed to be necessary in the causation of O. Kant then goes on to say that, in this case, O is considered an end. This is not strictly inconsistent with the former definition, but misleading because the reader is very likely to read the "when" as a "if and only if". Let me therefore distinguish two propositions:

(E) O is an end (cf. §64/370 1/243).

(NE) O is necessarily an end is possible only as an end.

E and NE are clearly different even if O did in fact originate as determined by a concept, it may have originated in a different way without any determination by a concept. Put in different words: That a particular type of cause (one that is determined by concepts) was sufficient for producing O does not imply that that cause was also necessary for O.

By applying judgment brackets to E and EP, we get two kinds of judgments:

(JE) judging O an end (cf. §64/370/242).

(JNE) judging O only to be possible only as an end (cf. §64/370/242).[9]

JNE is not to be confused with

(NJE) It is necessary to judge O an end.

The necessity in NJE is certainly not a moral one. Rather, the idea is that, in certain types of inquiry, O needs to be judged an end (cf. §61/359/233).

The problem, now, is that Kant sometimes slips between the different types of propositions without signaling any difference. The problem that I want to stress here is not about judgment brackets, but rather that Kant switches between notions with and without necessity (the title, the first sentence, and other parts from §64 provide another example).

The problem may to a large extent be solved by strengthening the definition of an end. To judge O an end may be taken to judge that O's cause *must have been determined* by a concept. Under this definition

9 Sometimes we will also consider judgments that something is possible only as *natural* end. What these judgments mean is that a product of nature is possible only as an end—the possibility only refers to that thing being an end.

and another plausible assumption about necessities, E would be equiv alent to NE.[10]

I reject this solution. It is too far from ordinary language. Also, under the solution, many of Kant's formulations would be unnecessarily redundant. For then "to see that a thing is possible only as an end" (§64/ 369/242) could simply be replaced by "to see a thing as an end".

How, then, can we explain why Kant slips between expressions that claim a necessity and others that do not? And how can we simplify things?

My suggestion is that Kant focuses on cases in which somebody judges that some O is possible only as an end (JNE), and that Kant does so for good reasons. I then suggest we follow Kant and assume that the analysis is really about JNE judgments.

A first reason why Kant focuses on JNE judgments is this: Kant's main interest seems to be a defense of teleological thinking in the natural sciences. The strongest possible defense that one can put forward in this respect is to say: In certain kinds of inquiry, presumably in inquiries about the origin or persistence of some object, we *have* to judge some thing an end (NJE; see §65/376/247, e. g.; cf. Ginsborg 2001, 233). But why may we *have* to judge something an end? Well, we have to judge so, if there are compelling grounds. And there are certainly compelling grounds for this, if we justifiably judge that something is possible only as an end (JNE). That suggests that our focus should be on cases in which a JNE judgment is made.

A second, related reason is that there is some pressure to get rid of teleological notions, if possible. We would have a unique account of the origin of objects in terms of efficient causes, if we could dispense with teleological notions (cf. Zuckert 2007, 89). This suggests restricting tel eological judgments to cases in which something is regarded to be pos sible only as an end (JNE) and this properly so. These cases will be at the focus of the following analysis.

10 The additional assumption is this: It is necessary that q, if and only if it is ne cessary that it is necessary that q, where q stands for an arbitrary proposition.

4. The path of Kant's argument

Kant's discussion of natural ends and the related judgments starts in §64. In the few sections before, he has mainly sorted out a few senses of "end" that do not interest him in his analysis. He has ended up with what he calls in ternal material objective ends or purposivity (see §63/366 367/239).

§64 is titled "On the special character of things as natural ends" (369/242). Kant starts with the notion of judging an O "possible only as an end" (ibid., cf. NE). He does so, presumably, because he will later focus on the more special case in which some *product of nature* is judged possible only in that way. Kant presents what he takes to be a necessary condition on judg ing O possible only as an end. Roughly, the condition has it that O is judged not to be possible only on the basis of the laws of nature (§64/369 370/242).

Kant goes on to consider an example in which we judge an O possible only as end (§64/370/242). In the example, he notes, O is an artifact and not a product of nature (ibid.). In passing, he makes clear what judging O an end amounts to for him: judging it a product of nature and judging it an end (ibid.). I have called this the obvious answer. Everything that follows is derived from that answer.

As Kant points out further, there is a threat that "natural end" is a con tradiction in terms (ibid.) and that the related judgments don't make sense. What Kant apparently offers as a counter is a *characterization* of natural ends a statement of necessary and sufficient conditions on everything that may properly be judged natural end. The characterization is supposed to pick a class of well known real world objects in order to avoid the threat.

Kant starts with providing an *initial and preliminary characterization* of nat ural ends: "I would say provisionally that a thing exists as a natural end if it is cause and effect of itself (although in a twofold sense)" (§64/370/243). This characterization raises a number of questions, one of them being: How can something be the cause of itself? Another question is how the initial characterization is related to the notion of an end. Kant very sketchily indicates an answer: The pattern of causes suggested in the preliminary characterization is as alien to our general concept of nature as are ends (§64/371/243).

Kant goes on to illustrate the initial characterization in terms of an ex ample (§64/371 2/243 4). A tree may be thought of as its own cause in sofar as: i. it originates as a species from a tree of the same species; ii. the tree grows and transforms alien material; iii. the different parts of the tree

contribute to the conservation of other parts, and vice versa. The examples at least indicate that there are real world instances of the initial characterization. Thus, if the initial characterization applies to objects that may be judged natural ends, the threat is avoided. So far, the initial characterization has only been stated as a thesis, and we do not yet know whether the initial characterization really applies to objects that may properly be judged natural ends.

This issue is taken up in §65, where Kant elaborates on his characterization of natural ends. He starts with highlighting the "improper and indeterminate" character of the preliminary characterization of natural ends in terms of self causation; a "derivation from a determinate concept" is promised (§65/372/244).

But the derivation does not immediately follow. Rather, Kant remarks on causality quite generally (§65/372 3/244). Surprisingly, Kant's remark does not shape the next two paragraphs at all. Rather, I think, the remark serves the following functions: 1. It is supposed to address some worries that concern the idea of self causation, which prominently figures in the preliminary characterization of natural ends.[11] 2. It prepares Kant's final characterization of natural ends by introducing the notion of X being the final end of Y.[12]

After the remark, Kant derives *two conditions* on objects that are properly judged natural ends; they form the core of the desired, more determinate characterization of natural ends (§65/373/244 5). In order to derive the conditions, Kant assumes the obvious answer and that the object under consideration is regarded as a whole. I call the derived conditions the *holism condition* (HC) and the *causal support condition* (CSC), respectively:

> (HC) in a natural end, the "parts […] are possible only through their relation to the whole" (§65/244 5/373).
>
> (CSC) the parts of the whole are causally responsible for each other and the whole.

I take HC to imply that *each* part has the desired property.

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11 To be more precise, the following worry is addressed: If a thing causes itself, then it appears twice in one causal chain. Kant's remark shows how this double appearance is in some sense possible.

12 McLaughlin (1990, 47) takes this passage to be the derivation that Kant has promised for the characterization of natural ends. But this cannot be so, since natural ends are never explicitly mentioned in this passage. McLaughlin himself comes to find the passage unclear and not quite deriving what he thinks the passage should derive (48).

Taken together, these conditions yield the desired *final characterization* of natural ends (§65/373 4/245). The way in which the parts in a natural end are related leads Kant to claiming that the parts are organs and that a natural end is necessarily "an organized and self organizing being" (§65/374/245). This formulation is partly taken up by the statement that forms the title of §65: "Things, as natural ends, are organized beings" (§65/372/244). Here "organized being" is presumably a shorthand term for "organized and self organizing being".[13]

Subsequently, Kant illustrates his final characterization of natural ends by discussing a thing that does not yet qualify as a natural end, viz. a watch (§65/374/246). The problem with the watch is that it lacks "formative power", says Kant (ibid.).

The remainder of §65 focuses on the status of judgments that some thing is a natural end. Kant compares such judgments to judgments that some thing is an artifact and finds that both judgments are dissimilar (§65/374 5/246 7). He also says that the notion of a natural end is a regulative rather than a constitutive concept (§65/375/247).

The final paragraph of §65 (§65/375 6/247) introduces the topic of §66. The notion of natural ends, says Kant, licenses a particular way of thinking, viz. teleological thinking. This thinking is enshrined in a principle that we need for judging natural ends: "An organized product of nature is that in which everything is an end and reciprocally a means as well." (§66/376/247 8). So much for an overview over Kant's path of argument. Without going into the details of the argu ment, we note that its structure raises a few issues.

First, if the characterization of natural ends is to bring out that there are objects that are properly judged natural ends, then the preliminary

13 Where, on my reading, Kant derives two conditions, which are then summar ized, McLaughlin (1990), 49 thinks that Kant provides three "determinations" of natural ends. He goes on to claim that the three determinations parallel the three illustrations that follow Kant's preliminary characterization of natural ends and in which a tree is considered. I think, my reading of Kant's is superior, since (1) Kant explicitly numbers the condition by "first" and "second" (§65/373/244–5), but never speaks of "third". (2) After having derived both conditions, Kant begins with a sentence that contains a "therefore" (ibid.), which fact suggests that Kant takes stock. (3) What Kant says after the two con ditions does not go much beyond what has already been asserted. (4) I do not see a close parallel to the three illustrations with the tree. For instance, I fail to see how the reproduction example is taken up (similarly Zuckert 2007, 99).

characterization has to be related to the final characterization. Kant, however, does not do this. I will take up this issue later.

Second, Kant derives the final characterization by starting with a judgment of the type JNE. Now it is very easy to derive from this *necessary* conditions for objects to be judged natural ends. But that does not address the threat of inconsistency, because one may derive anything from inconsistent propositions. What needs to be shown is that the con ditions are also jointly sufficient. I will have to check this later (subsec tion 5.2).

Third, from my overview, one might have inferred that HC and CSC are factual. If this is so, then we face a puzzle: Kant starts with a judgment that O is natural and a judgment that O is an end. If the final results of the derivation, HC and CSC, are factual, then Kant, in his derivation, must have consistently assumed that both judgments are factual. But we know that, taken as factual, the judgments from which Kant starts jointly imply a contradiction. So why did Kant not end up with that contradiction? The answer can only be that Kant, in his derivation, gives up factuality at some point. I suggest that Kant pro ceeds as follows: He tries to take the judgments from the obvious an swer as factual, as long as this is possible. At some point, factuality must be given up, and Kant does so a step that is pivotal for what I call the account of teleological judgments. As a consequence, HC and CSC cannot be purely factual. That is another issue that I need take up (subsection 5.3).

In the following I will discuss and reconstruct the crucial parts of the argument. I start with Kant's derivation of the final characterization (subsection 5.1 5.4) and then show that the preliminary characteriza tion matches the final one (subsection 5.5).

Before I begin with a detailed discussion of Kant's main argument, let me briefly comment on its status. The sections under investigation are part of the Analytic and therefore only deal with conceptual ques tions. The task is to make explicit what it is to judge something a natural end. I take it that Kant's aim is not a strict proof that there are natural ends.[14] On my view, his undertaking is interesting enough. For, first, Kant's characterization of objects that may properly be judged natural ends is of great help to find such objects, and Kant provides examples

14 Zuckert (2007, ch. 3), on the contrary, provides a reading of the "Critique of the Teleological Power of Judgment" under which Kant does have an argu ment why we need to assume natural ends.

(although there is no strict proof that the examples match the conditions). Second, the fact that Kant's characterization is derived in an argument ensures that the characterization is complete in that it picks every object that is properly judged a natural end.

5. Kant's argument in §65

Regarding the details of Kant's argument, I can immediately start with the two conditions on natural ends. As suggested before, let us assume that O is properly judged possible only as end and at the same time judged a product of nature.

5.1. The holism condition

The first condition is derived by the following argument:

> [P1] Now for a thing as a natural end it is requisite, **first**, that its parts (as far as their existence and their form are concerned) are possible only through their relation to the whole. [P2] For the thing itself is an end, and is thus comprehended under a concept or an idea that must determine *a priori* everything that is to be contained in it. [P3] But insofar as a thing is conceived of as possible only in this way it is merely a work of art, i.e., the product of a rational cause distinct form the matter (the parts), the causality of which (in the allocation and combination of the parts) is determined through its idea of a whole that is thereby possible (thus not through nature outside of it). (§65/373/244–5, translation changed).

In this passage, Kant obviously derives the holism condition; it is expressed in P1. In what follows, I take it that Kant, by talking about ideas, means concepts.

Unfortunately, there is a problem with the passage. The passage starts with a JNE judgment, from which certain implications are derived. But in P3, Kant apparently infers that the natural end is thought to be an artifact, which is precisely what would lead into the contradiction that is to be avoided.

What might be called the *standard reconstruction* reads P3 slightly differently: "But insofar as a thing is conceived of as possible only in this way *and nothing more is said/no additional condition holds true*, it is merely a work of art, i.e. […]" (after §65/373/245). Thus, under the standard reconstruction, P3 indicates that a second condition on the notion of

a natural end is needed, and that second condition is indeed immediately forthcoming in Kant's text – it is the causal support condition. Read in this way, P3 is not part of the argument, but rather provides a bridge to the derivation of the causal support condition. Accordingly, under the standard reconstruction, P1 contains a thesis that is proven in P2. Remarkably, P2 does not make any reference to nature. As a consequence, P1 would only flow from the notion of an end (cf. Ginsborg 2006, 457).

But there are problems with the standard reconstruction. First, P1 seems wrong, if it refers to any end. Consider Kant's example of the hexagon in the sand. The hexagon consists of lines as parts. However, a single line in the sand seems perfectly possible (Zuckert 2007, 113 agrees). Second, if P2 is the only argument, then it falls short of establishing P1. Even if the concept of the whole fully determines every part of the thing – even if this must be so for the thing to be possible, it does not follow that some parts may not have originated independently from the whole.

The problems may be overcome by a different reading of the passage. A first thing to notice is that Kant unnecessarily slips from an NE like thesis to an E like thesis between P1 and P2. P1 and P2 may therefore be amended in the following way:

> [P1] Now for a thing as a natural end it is requisite, **first**, that its parts (as far as their existence and their form are concerned) are possible only through their relation to the whole. [P2] For the thing itself is possible only as an end, and is thus comprehended as possible only under a concept or an idea that must determine *a priori* everything that is to be contained in it. (§65/373/244–5).

For P3, I suggest the following reading:

> But insofar as a thing [a whole consisting of parts] is conceived of as possible only in this way *and P1 is false*, it is merely a work of art, i. e., the product of a rational cause distinct form the matter (the parts), the causality of which (in the allocating and combination of the parts) is determined through its idea of a whole that is thereby possible (thus not through nature outside of it). (§65/373/245).

The idea is thus that the argument proceeds in the manner of an indirect proof: Kant imagines that P1 is false and derives a contradiction. Under the new reading, the Kantian argument may also be presented as follows (I will consistently drop judgment brackets): Consider a thing O that is possible only as natural end. Consequently, O is possible only in virtue of a cause that, in turn, is determined by C(O). It follows that O is possible only in virtue of C(O). The last statement leaves open how exactly

O is possible only in virtue of (O), but this suffices for what follows. As sume now that O is a whole that consists of parts. It follows that O as a whole consisting of parts is possible only in virtue of C(O). One way in which O as a whole may only be possible in virtue of C(O) is this: The parts of O must have been put together in a way that is determined by C(O). If this is the only way how C(O) determines the origin of O, it is implied that O was put together by someone who had C(O) in mind by an artisan, as it were. But then O would be an artifact. But O is not an artifact, because it is a product of nature. How, then, can O only be possible in virtue of C(O)? Well, the only alternative left seems to be that also the parts (some of the parts) each are possible only in view of that concept. And this implies that the parts are in some way possible only in view of the whole (or "through their relation to the whole", as Kant puts it, ibid.), since the concept C(O) is the concept of the whole. We have thus arrived at HC.

The new reading solves the problems of the first reading. Yet, I do not want to say that Kant's argument is now entirely sound (see section 6).

5.2. The causal support condition

Let me now discuss the second condition on natural ends, viz. CSC. Ac cording to the condition, roughly, the parts cause each other. Here is Kant's argument for CSC:

> But if a thing, as a natural product, is nevertheless to contain in itself and its internal possibility a relation to ends, i. e., is to be possible only as a natural end and without the causality of the concepts of a rational being outside of it, then it is required, second, that its parts be combined into a whole by being reciprocally the cause and effect of their form. For in this way alone is it possible in turn for the idea [concept] of the whole conversely (reciprocally) to determine the form and combination of all the parts […]". (§65/373/ 245).

Now in what seems to be the summary of his argument, viz. in the next paragraph (ibid.), Kant goes slightly beyond the CSC. He does not only say that, in a natural end, the parts cause each other, but also that the parts cause the *composition* of the whole and the *whole* itself. The first thing to be sorted out is therefore how we may think of the causation of a whole that is composed of parts. For this, we may distinguish be tween three ways in which something, A, may have causal force on a whole:

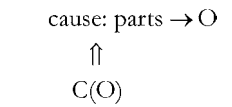

Diagram 3: Kant's characterization of natural ends

C1 A causes the parts.
C2 A causes the composition of the parts in the whole.
C3 A causes the whole.

I suggest that C3 is equivalent to the conjunction of C1 and C2. Kant's claims may be summarized in that C1, C2 and C3 are true for A being the parts of a natural end. CSC is Kant's C 1 type claim with A being the parts of a natural end. Because of the equivalence that I have noted, it is sufficient for Kant to argue for his C3 type claim.

If we extend Kant's argument to a C3 type claim, it goes as follows: Consider a thing O that is possible only as natural end. Assume, once more, that O is composed of parts. Consider now the cause of O. Fol lowing the argument for HC, the parts are in some way determined by C(O) in fact, they are possible only in view of C(O). Thus, if the parts are the cause of O, then O's cause is indeed determined by C(O). Now, as far as no other cause seems available that is determined by C(O), we can safely conclude that the parts are in fact the cause of O.[15]

Unfortunately, there is a little loophole in the argument. The co gency of the argument turns on the assumption that the parts are the only candidates that may cause O and that are at the same time deter mined by C(O). Kant never argues for this assumption. Fortunately, the assumption does not strike one as particularly implausible. Maybe it can be inferred from the argument for HC.

We have now reviewed the arguments for both conditions. So far, everything seemed to be purely factual talk. Let us therefore for the meanwhile assume that we have a realist account and that we can pres ent Kant's result as a plain characterization what natural ends are. The characterization is visualized in Diagram 3.

Here the causal arrow from the parts to O comes from CSC. The other arrow from C(O) to the parts comes from HC the parts are possible

15 In his argument, Kant says that the parts are mutually causes of their *forms* (ibid.) rather than of each other. But I think, we can neglect that point in the recon struction. Kant mentions forms, I think, because he wants to highlight that the other parts make some part to be as it is. We can read this as a qualification into my statement of CSC and of the argument.

only in view of the concept C(O) and must therefore be determined by C(O). Kant's formulation of HC might suggest that O rather than C(O) is at the bottom of the double arrow – in Kant's words, the parts are possible only in view of the whole. What is shown in the proof of HC is more – really, the parts are possible only in view of C(O). Furthermore, if there was no C(O) in the diagram, then we would immediately get a problem.

As argued in section 4, a crucial issue is whether the conditions HC and CSC or Diagram 3 are sufficient for natural ends. For, deriving necessary conditions from the obvious answer does not really address worries regarding consistency. We need sufficient conditions that may be fulfilled by real world objects, and the question is whether Diagram 3 is sufficient for natural ends – for objects that are properly judged natural and that are properly judged ends, as the obvious answer suggests.

Regarding ends, Diagram 3 seemingly literally instantiates the pattern from Diagram 2. It would follow that natural ends are ends proper. Thus, what the diagram seemingly shows is that HC and CSC are jointly sufficient for ends.

But is a thing that fulfills Diagram 3 also a product of nature? If we consider Diagram 3 in more detail, then there is an immediate worry. According to the diagram, for an object O, the concept C(O) determines the parts (or their origin, maybe). The concept, however, has to be in the mind of somebody. Now the obvious way in which C(O) can determine the origin of the parts is that an artisan produces the parts with having C(O) in mind. If this is so, then the object O is at least very close to being an artifact – indeed, if causality is transitive, then the artisan *is* the cause of O.[16] And we are not then dealing with a product of nature.

The problem goes back to the argument for HC. On the reading proposed in this paper, the argument considers two alternative ways in which an object that consists of parts may be possible only as an end: Either the composition of the object is possible only in virtue of C(O), or the parts of the objects are possible only in virtue of C(O). The first alternative was excluded, since it implies that O is produced by an artisan. To that extent, the argument is sound. The problem, though, is that the second alternative seems no better than the first one, since it also leads to the view that O is caused by an artisan.

16 Transitivity of causality means this: If A causes B and B causes C, it follows that A causes C.

5.3. Whose concept is it?

Here is our problem again: Diagram 3 makes only sense, if we can assign the concept C(O) to some epistemic subject. It cannot be an artisan, for then the natural end would be an artifact. Who else can it be otherwise?[17]

There is still one person left who can do it. That is the judger. It is the judger's concept of the whole that does the determining. This, in a nutshell, is Kant's proposal.

The proposal seems to be a complete non starter. For how can the judger and her representation determine some object? We do not affect some object, if we look at it or if we judge it to be this or that. Rather, for Kant, in acquiring empirical knowledge, we are affected. In Kant's terms, only an *intellectus archetypus* would kind of bring about things by looking at them (see Mohr 2004, 137 138 and 414 415 for *intellectus archetypus*).

Kant has a counter to offer. His suggestion is that the judger's concept of the whole does not determine some object out there in the world. What the concept of the whole literally determines is the judger's *cognition* of an object.

An important passage in this respect is the passage in which Kant derives the causal support condition. According to Kant's argument, the concept of the whole determines the parts and their combination

17 A possible answer at this point is, of course, that God produced the object with the concept in mind. That answer solves our problem, if God creates objects via natural processes. But Kant does not consider this answer, and for the purposes for this paper, I will simply follow him without examining the issue. Regarding Kant's views, there is a connection to his denial that what he calls the physico teleological proof for God's existence is successful (see particularly *Critique of Pure Reason*, IV:648–658/578–583; but in the "Critique of the Teleological Power of Judgment", Kant offers a moral argument in favour of God's existence, see, particularly, §87/457–463/313–318). For the purposes of this paper, one may suggest a *pragmatic* rationale why Kant does not consider God at this point: Ultimately, Kant's task is to make sense of teleological judgments in the natural sciences. To analyze teleological judgments in terms of theological notions does not have much in favour of it, because, at least in present days, scientists need not be committed to think that God exists and produces all kinds of objects. This is a pragmatic argument—a refusal to understand teleological notions in terms of God's actions at this point is certainly compatible with the view that God created individual objects of all kinds through natural processes.

> […] not as a cause—for then it would be a product of art—but as a ground for the cognition of the systematic unity of the form and the combination of all of the manifold that is contained in the given material for someone who judges it. (§65/373/245).

The passage makes it clear that the concept C(O) does not determine an object out there in the world, but rather a cognition, as Kant puts it. This is also suggested in the following passage, in which Kant speaks of a body that must be thought of as a natural end:

> […] the concept of […] [the particular body] would in turn be the cause (in a being that would possess the causality according to concepts appropriate for such a product) of it [the body, presumably] in accordance with a prin ciple." (§65/373/245, translation changed).

In an intellectus archetypus, says Kant, the concept of the whole would indeed produce some object. For us, we may add, the concept of the whole in some way determines a cognition.

So far I have glossed over the question what the crucial cognition is a cognition of. What is cognized through the cognition?

The second passage that I have quoted suggests that it is the cogni tion of the whole thing (a tree, say). But this cannot be the answer. For, first, that the cognition of some O (knowledge of something) is in some way grounded in a concept under which O falls is a general thesis that Kant defends in the first Critique. The thesis is supposed to apply to every kind of knowledge. At the point of the discussion where we are, Kant has to go beyond his general thesis, for we are concerned with what is in some sense a special class of objects, viz. natural ends. A second reason why the concept of the object cannot ground the cog nition of the whole object itself, is this: If natural ends are to be ends in some sense, then the pattern in Diagram 3 needs to be instantiated. But if C(O) determines the cognition of O, then we are very far from that diagram in the diagram, the arrow that designates the determination points to the parts, rather than to O.

Diagram 3 suggests an alternative answer to the question: What C(O) determines or grounds is the cognition of the parts and, maybe, of their interaction (the interaction of the parts is somehow focused on in the first passage that I have quoted in this subsection). Kant does not spell out what that could mean, but for a first illustration we may say that a judger will typically proceed top down rather than bot tom up. She will start from the concept of the whole, and he will make sense of the parts by relating them to the whole. Maybe, the identifica

tion of the parts crucially turns on the conception of the whole. In functional decomposition, the parts of a biological system are identified in terms of their function, and the identification of the function may relate the parts to the whole.

Let me sketch an example. Living beings have hearts. Now one can certainly identify the human heart by its form, by its weight, by its position within the human body etc. This is probably how the heart was thought of as for a long time. However, for generalizations in biology we wouldn't probably identify the heart in that way. Suppose, we are dealing with a hitherto unknown mammal, and our task is to find its heart. The form of the human heart may be a very bad guide to find the heart. Rather, we would look for an organ that fulfills a certain function, viz. circulating blood, where in turn the circulation of the blood serves the function of keeping the living being alive. That suggests that we identify certain types of organs by their function for the whole living being. Accordingly, the word "heart" is not defined in terms of morphological and similar notions, but rather in terms of a function that links the heart to a whole living being.

There is also a slightly different way of spelling out what the crucial cognition refers to. The idea is that the concept of the whole grounds the cognition *of O's origin or stability,* as far as that arises from the parts. That would roughly be compatible with Diagram 3, because Diagram 3 indeed concerns the origin or the stability of O. In fact, as has been noted before (section 3), in the type of diagrams that we consider, the determination does not strictly concern the existence of the cause but the cause *insofar it causes the object* (here the parts, *insofar they produce the whole*). There is also textual support for this new suggestion. At a place where Kant considers something that is judged possible only as an end, he says: "even empirical cognition of it regarding its cause and effect presupposes concepts of reason" (§64/370/242; cf. also §63/366 367/239, translation changed).

Altogether, Kant's proposal is this: The concept C(O) does not literally determine the object O, but rather the cognition of its parts or of its origin. "Determination" may be understood like this: In certain kinds of inquiry about the object O, we start with the conception of the whole object.

Kant's proposal has important consequences for the status of judging something a natural end. So far, we have assumed that to judge something a natural end is to assert matters of fact that obtain in a mind independent way. At this point of the inquiry, however, the assumption is

given up. Ultimately, on Kant's understanding, to judge something a natural end is not to assert it an end in a literal sense. In the related judg ments, it is not asserted that C(O) determines the parts of O. The crucial determination relation is not supposed to hold in the world out there, but rather in an "epistemic world" within the judger. The relation holds *for us*, but not in a world that is independent from us.

As a consequence, Kant' account of judging something a natural end is not realist. In order to illustrate that, assume that Peter judges O a nat ural end. Peter may express his judgment by saying: "O is a natural end." On Kant's understanding, if Peter's words are taken literally, they do amount to a contradiction. Kant rather proposes a different reading of Peter's words such that Peter turnes out to make a reasonable point. Under Kant's proposal, the statement does in fact partly make an assertion. It is claimed that the parts of O cause O (CSC). But there is another component of Peter's judgment. Kant does not quite make ex plicit what kind of mental event, speech act or attitude that component is. Now, in order to make Kant's proposal a bit more suggestive, we may say that the other component is this: Peter *commits himself to ap proach the object in a particular way*, viz. roughly to proceed from the whole to the parts. Or: Peter judges that, in certain types of inquiry, the object ought to be approached in that way. Or: Peter simply *is* ap proaching the object following the analogy. And that might be ex pressed in Peter's linguistic statement.

Kant himself describes the status of judging something an end in the following terms:

> [t]he concept of a thing as […] a natural end is therefore not a constitutive concept of the understanding or of reason, but it can still be a regulative concept for the reflecting power of judgment, for guiding research into ob jects of this kind […] in accordance with a remote analogy with our own causality in accordance with ends […]. (§65/375/247).

Here, that the concept is not constitutive but regulative means roughly that the concept does not figure as a predicate in factual assertions; rath er it is supposed to provide a rule for approaching the object (cf. §70/ 386 388/258 260).

The example with Peter has made vivid how we may think of the non factual component of the judgment. For simplicity, let me stick with the view that it is a commitment. But what exactly is the content of that commitment? To which kind of approach does Peter commit himself?

As the last quote makes plain, Kant himself suggests that an analogy is crucial for the understanding of judging something a natural end. Ap parently Kant struggles quite a bit in getting clear how exactly the anal ogy is to be understood. In the passage just quoted, Kant suggests that there is an analogy between natural ends and artifacts produced by arti sans, but a few lines above in his text (§65/374 375/246 247), he as serts that, properly speaking, there is no such analogy. If there is no anal ogy, then Kant has failed to explain the content of the non factual com ponent in judging something a natural end. My reconstruction of Kant's view may help to sort things out. On the proposed interpretation, judg ing something a natural end has a purely factual part: It is claimed that the parts cause the whole. At first sight that makes any analogy with an artisan problematic, for how can one assert that the parts cause the whole and at the same time suggest an analogy according to which an artisan has produced the object? This seems Kant's main reason for claiming that, strictly speaking, there is no analogy. What Kant over looks at this point is that the analogy may refer to the second arrow in Diagram 3. The analogy would then be that an artisan has produced the *parts* with the concept of the whole in mind.

Another analogy that is closely related is that with an intellectus ar chetypus. The content of the commitment may then be to proceed as if we were an intellectus archetypus (cf. Ginsborg 2006, 460 461).

That Kant's account is non realist has important consequences for the characterization issue. Given the non realism, a characterization cannot pick the objects that are natural ends; rather the objects that may properly be judged natural ends are to be picked. When is an object properly judged a natural end according to Kant? Well, at this point we just have to insert Kant's account of judging something a natural end. One condition in the characterization is obviously that one may prop erly assert the parts to be the cause of the object. And that, of course, requires that the parts *are* the cause of the object, which precisely is CSC. The other condition is that the commitment to a particular epis temic approach to proceed top down is appropriate for the object under scrutiny. And, of course, the commitment to that approach is appropri ate, if the approach is appropriate regarding the object. When is the ap proach appropriate? I suggest, it is appropriate, if we can not resolve an epistemic task unless we adopt the approach, i. e. if *this is the only way to understand the parts* (or the origin of the whole, as far as it arises from the parts). In practice this means that the parts bear such a relation to the whole that we cannot proceed bottom up. This is a version of HC.

But the version somehow involves our epistemic abilities. In that sense, in the characterization of natural ends, HC and the corresponding arrow in Diagram 3 have to be taken with some grain of salt.

We can infer that, even under Kant's non realist account, CSC and HC provide necessary and jointly sufficient conditions that spell out the characterization of natural ends, provided some qualifications are borne in mind. For the following sections, CSC and HC will therefore pro vide the characterization of natural ends. Another consequence of my suggestions, by the way, is that we may judge an object a natural end, if and only if we must judge it so.

5.4. Kant's final characterization of natural ends

As the analysis of the argument in §65 has made plain (section 4), Kant, after having derived both HC and CSC, finishes his characterization of natural ends by a summary and a few more thoughts. The most impor tant point seems to be that a natural end is necessarily "an organized and self organizing being" (§65/374/245). I take it that this is a short formu la that summarizes Kant's characterization of natural ends, which, in turn, is ultimately in the conditions. How can we understand the new formula?

For Kant, things that are judged natural ends are *organized*, because they are judged to have organs as parts. On Kant's understanding, a part of something is an organ, if it exists for the sake of the whole and of the other parts (§65/373/245). That the parts of a natural end exist for the sake of a whole is clear from Diagram 3 and Kant's understanding of "for the sake of" (section 3). Kant's claim that the parts exist also for the sake of the other parts has not really been justified, but I cannot dis cuss this further. Kant's other term, *"self-organizing"* obviously takes up the causal support condition according to which the parts and thus in a sense the object itself provide the cause of the natural end.

5.5. The preliminary characterization of natural ends

As we have seen, for a cogent argument, Kant's preliminary character ization of natural ends for which real world examples were given, has to be related to the final characterization. The preliminary characterization has it that "a thing exists as a natural end if it is cause and effect of itself

(although in a twofold sense)" (§64/370/243). For Kant's argument, it is sufficient that the preliminary characterization implies the final one.[18] Kant does not show this, but we may argue as follows: In some stretch ed sense, the parts of a thing may be thought of as that very thing. Now, in Diagram 3, the parts cause the whole, and, thus, in the stretched sense, the thing itself (properly speaking its parts) is its cause. Moreover, according to Diagram 3, the concept of the thing determines the parts (the origin of the parts). So, if we forget a while that the concept of the thing is not the thing itself and that determination is not here causation, we may say that the thing (its parts) is also the effect of (is also deter mined by) the thing (its concept, to be precise).

This way to relate the characterizations has two merits: First, it ex plains why Kant says the thing is its own cause *and its effect*. This seems redundant, because, per definition, if A is the cause of A, then A is also its effect. Kant, I think, says that the thing is its own cause and effect, since he has two relations in mind: The parts produce the whole; and the whole (its concept, properly speaking) determines the parts. Second, Kant's remark in the brackets "although in a twofold sense" (ibid.) can now be made sense of as follows: We are really talking about two relations in which the objects stands to itself. One is causation, the other is determination.

Another interesting question is how the phenomena from the illus trations with the tree instantiate the final characterization of natural ends. Unfortunately, one has to say that the final characterization moves away from the three respects in which a tree causes itself. The first illustration reproduction is not at all related to the final charac terization, which exclusively focuses on one individual.[19] The second il lustration growth does obviously not concern parts and wholes, ei ther. Only some phenomena mentioned in the third illustration causal relations between the parts such that the whole thing is sustained, e. g. instantiate in a way the pattern of Diagram 3. This may be enough for Kant's overall argument to be cogent.

18 I take it that the preliminary characterization is supposed to be equivalent to E and not to NE.

19 One may suggest that the different individuals are parts of the species (Guyer (2001, 264) reads this suggestion into Kant), but the suggestions seems too ob viously false.

6. Summary and discussion points

The most important task of the Analytic in Kant's "Critique of the Teleological Power of Judgment", is to answer the following question: What is it to judge an object a natural end? As Ginsborg (2001, 2006) has pointed out, the question poses a challenge, because to judge something a natural end seemingly amounts to assert inconsistent propositions, viz. that something is a product of nature and that is has been produced through intentional action.

My paper starts from the simple observation that Kant himself explicitly notes the air of contradiction around the notion of a natural end in §64. After he has done so, he starts some argument to address the worry. My proposal was to have a closer look at that argument in order to check whether Kant does not offer a solution right here.

According to my view, Kant does indeed offer a solution. Let me summarize it in a very condensed way. There is first the *account* of judging something a natural end. For Kant, judging object O a natural end is to assert that its parts cause O and to commit one to approach the parts or the origin of O from the top to the bottom, starting with the concept under which O falls, as if the parts of O were designed by an artisan for the sake of O. This account is non realist, because the judgments are not just taken to assert a matter of objective fact; rather, they have a subjective component viz. a commitment. The idea that the judger commits herself to a certain approach was actually only one suggestion from my part to cash out the non realism; there are other ways how this might be done; and they should be tested in the larger context of the "Critique of the Teleological Power of Judgment". In any case, the non realist account is clearly not empty.

Second, there is the characterization of objects that are properly judged natural ends. On my view, Kant's characterization is this: In natural ends, the parts cause the whole. Moreover, the epistemic approach from the concept of the whole to the parts is appropriate. I have suggested that it is only so, if the parts are so intimately related to the whole that we cannot make sense of the parts or the origin of the whole otherwise. In a sense, the parts seem possible only in view of the concept of the whole.

On my reconstruction, what is crucial for Kant's account is the peculiar way in which the parts of a natural end are supposed to be related to the whole and to each other. In Kant's terms, we are dealing with

organized and self organizing beings. Here I am in substantial agreement with Zuckert (2007, ch. 3).

From a more systematic point of view, Kant's characterization of natural ends, I believe, highlights important traits of living beings. In particular, what I have called the holism condition is interesting. The holism condition claims some priority of the whole. Kant's tenet is that living beings must be regarded top down, as it were, rather than bottom up. We have to start with the whole rather than with the parts. This sounds like a profound truth.

How successful is Kant's argument overall? In the previous sections, I have tried to provide a reconstruction of the argument, under which it goes through, although there were problems with the details. There is, however, one problematic point that I have not yet touched. At some point in the derivation, Kant gives up realism and takes some compo nent of the judgment not to be a factual assertion any more. That is nec essary, because, literally taken, on Kant's understanding, there cannot be a natural end. A critical question, now, is whether one could not have argued in a substantially different way by giving up realism at a different place. Let me give an example: According to my interpretation, Kant argues for a so called holism condition by excluding the idea that the natural end is supposed to arise from a combination of parts that may exist independently of the whole. The crucial question, now, is whether Kant could not have given up the realism condition at this place by ar guing that the natural end is in a non literal way thought to be com posed of independent parts.

In this paper, I have restricted myself to a small portion of Kant's text. I take this to be legitimate, because we have to start with under standing the details. At the same time the interpretation that has emerged should certainly be put in a larger perspective. At least the fol lowing two questions are important in this respect. First, Kant obviously thinks that teleological thinking is useful in the sciences. The question, then, is how my account can underwrite that. Second, in the "Critique of the Teleological Power of Judgment", Kant suggests that teleological judging is more objective than aesthetic judgment (see Introduction VIII/192 193/78 79 and §61/359 360/233). The related question is: How can the proposed interpretation make sense of that suggestion?

I conclude with a possible objection against Kant. Kant's claims re garding the way the parts and the whole of a natural end are related are only true for living beings, e.g., if we consider parts *at a certain level* if we take the heart and the liver, say, as parts. At a more fundamental

level, a living being consists of atoms as its parts. And the atoms are not related to the concept of the whole living being at all. Also, the atoms are not the causes of the other atoms and the whole. So, at this level, Kant's characterization fails for what are supposed to be the prime examples of natural ends.

A first thing to be noticed here is that the objection concerns Kant and not my interpretation. Secondly, Kant discusses parts and wholes elsewhere in his work (for instance, in the second antinomy of pure reason, particularly IV:466/480), and his results may be brought to bear on the present problem. But it would be far beyond the scope of my paper to do that. Instead, I will offer a few systematic thoughts. What seems required here is a distinction between different ways in which something may be part of another thing. The idea may be that atoms are only parts of an animal in a weak sense, but not in a strong one (for instance that they are parts only casually, but not permanently). The next step should then be to show that Kant's claims regarding natural ends, if read in the right sense (i.e. if we read "parts" in the strong sense), do indeed separate between things that we wish to come out as natural ends, but not of others. If this works out fine, then we can propose that Kant, in his discussion, simply refers to parts in the strong sense. However, if this proposal is to make any sense, an additional argument is required that shows that natural ends have at all parts in the strong sense.

Another, presumably more promising strategy would slightly modify the characterization: The new characterization would only demand the *existence* of parts that are possible only in view of the whole and that causally support each other. What is distinctive about natural ends on this proposal is that *there is a level of non-trivial parts* such that the parts are possible only in view of the whole – not, that this is true at any level.[20]

20 I am grateful for extremely valuable criticism by two anonymous referees for the *Kant Yearbook*. Also, I would like to thank N. Naeve for discussion and H. Pringe for written comments. Part of this work was supported by the German Academic Exchange Service and the Center for Philosophy of Science at the University of Pittsburgh, and I am grateful to them.

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Teleology in Biology: A Kantian Perspective

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Abstract

One of the most widely debated issues in contemporary philosophy of biology is the problem of teleology. How are we to understand apparently teleological concepts, such as that of a "function", given our conception of science as providing causal explanations for natural phenomena? In this paper, I reconsider this debate from a Kantian perspective. The crucial contribution of the Kantian account is to argue both that teleology plays an important heuristic role in the search for causal explanations of nature and that it is for us an inevitable analogical perspective on living beings. The Kantian perspective, I shall argue, is not only compatible with the modern life sciences but can advance the debate about teleology in biology precisely because it does not interpret teleology naturalistically.

Introduction

The biological sciences are special within the realm of the natural sciences. They employ concepts that have long been taboo in physics and chemistry. Biologists may speak, for example, of the *functions* of biological traits and of genetic *programmes* that *control* biological processes. They may ask what a particular trait of an organ *is for*, or what *purpose* it has for the *functioning* of the organism as a whole. Expressions such as these sound unmistakably teleological. We are familiar with these concepts from the description of our own actions. We speak of a person, for instance, as acting for a purpose, as designing an object to perform a certain function, or as creating a programme to carry out a particular task. In the realm of human activity, purposes, functions and programmes thus involve the intentions of an intelligent agent, intentions that the agent aims to realise by means of her activities in the world.

1 I would like to thank Nick Jardine, Tim Lewens, Onora O'Neill and an anonymous referee from the *Kant Yearbook* for helpful comments on earlier drafts of this paper.

What, however, do the same concepts mean in the context of biol ogy? Do they, as in the case of human action, require the existence of an intelligent agent? A positive answer would be incompatible with our modern conception of the task of science as providing explanations for natural phenomena without thereby resorting to supernatural design or purpose. Can we, then, explain teleological concepts in biology as referring solely to mind independent features of nature? What seems so special about teleological descriptions is that the purpose or the end of a functional process or programme, although they may lie in the future, somehow determine what goes on in the present. And yet, would this conception of a *final* causation not contradict the as sumption that causes must precede their effects? Would it not conflict with our conception of science as explaining all natural phenomena by reference to *efficient* causes? How, then, can we make sense of the phenomenon of teleology in the biological sciences?

The problem of how to understand the use of teleological concepts in the life sciences is one of the most widely and controversially debated problems in contemporary philosophy of biology. It is surprisingly closely related to Kant's discussion of teleology and the purposiveness of nature. In this paper, I thus aim to cast some light on this modern debate by reconsidering it from a Kantian perspective. I shall start by surveying some of the recent approaches to the problem of teleology in biology (§1) and by investigating the epistemological status that these approaches attribute to teleological statements (§2). Commenta tors seem to disagree about the question whether teleological concepts can be explained in purely naturalistic terms or whether they entail ana logical associations with intentional goal directedness. The Kantian conception of teleology, I shall show, is essentially analogical (§3). The crucial contribution of the Kantian account is to argue both that teleology plays an important heuristic role in the search for causal ex planations of nature and, more fundamentally, that it is for us an inevi table analogical perspective on living beings. The Kantian approach to teleology thus introduces a focus that goes beyond any empirical inves tigation of nature. This is the focus on the very possibility of experienc ing the living part of nature. By clarifying the relation between this Kantian account and empirical science (§4), I aim to show that the Kantian perspective is not only compatible with the modern life scien ces, but that it can advance the debate about teleology in biology pre cisely because it does not interpret teleology naturalistically (§5).

1. Explaining Functions: Aetiology and Causal Roles

Most approaches to the problem of teleology in contemporary philoso phy of biology fall roughly into one of two categories. While aetiolog ical accounts explain the function of a trait by reference to the way the trait evolved, causal role theories argue that a biological trait has a func tion if it contributes to the working of a more complex biological sys tem. Both approaches seem to be motivated by certain rather plausible intuitions that lie at the basis of our teleological descriptions of nature.

The aetiological account of teleological statements in biology is a backward looking analysis. It is the particular developmental history of the trait of an organ which is taken to justify the functional descrip tion of that organ. Larry Wright, one of the chief proponents of the ae tiological account, analyses functional statements in biology in the fol lowing way:[2]

> The function of X is Z means,
> (a) X is there because it does Z,
> (b) Z is a consequence (or result) of X's being there.[3]

The second condition (b) states that what is called the function Z is a consequence of the trait or behaviour of X. The first condition (a), moreover, specifies that Z cannot just be *any* consequence of X. Rath er, (a) takes account of the claim that X's having or doing Z is, in turn, a reason for X's existence itself. A trait X is considered as having the func tion Z if it exists precisely because it does, or brings about, Z.

Condition (a) thus takes account of the claim that the function of X is Z purely in terms of efficient causes. Teleological explanations differ from ordinary causal explanations, however, insofar as they are interest ed not merely in the originating causes of a particular trait but, more specifically, in the consequences of the trait which have an effect on the originating causes of the trait itself. As specified by condition (a), the relevant consequences of the functional trait X are those that *feed back* into the efficient causes for X.[4] The capacity of pumping blood

2 Wright (1973) and (1976).
3 Wright (1973, 161).
4 Wright here takes up the notion of "feedback" that played an important role in the cybernetic accounts of the first half of the 20th century. Important expo nents of this area of research are, e.g., Rosenblueth, Wiener and Bigelow (1943), E. S. Russell (1945), Wiener (1948), Sommerhoff (1950), and von Ber talanffy (1952).

can thus be called a function of the heart, on Wright's account, because the following two conditions hold: the capacity to pump blood is a consequence of the presence of the heart (b), and the fact that the heart has the capacity to pump blood is the efficient cause of the existence of the heart itself (a).

And yet, how can the presence of the heart be the effect of an activity which is first made possible by the existence of the heart itself? Would the heart not be said to *cause itself?* Wright's account, it seems, is most plausibly understood when supplemented by a type token distinction.[5] Understood as a trait *type*, Z can then in condition (a) be taken to be among the efficient causes of X. The presence of Z in condition (b), however, can be considered to be a consequence of X if it is understood as a *token* of the trait type that was among the causes of X. Although the presence of the heart is the efficient cause of certain tokens of pumping activity, it was the fact that the heart had the capacity for the type of activity of pumping blood that was among the efficient causes of the existence of the heart in the first place.

Given this clarification, we can see how Wright's analysis was developed further by invoking the theory of evolution by natural selection. Inspired by evolutionary theory, Karen Neander interprets condition (a) as saying that X is there *because its ancestors did Z*, and *because they were favoured by evolution for doing Z.*[6] Similarly, Ruth Millikan calls an aspect of a biological trait its "proper function" if it positively influenced the natural selection of that trait.[7] The dark pigment of the wings of the peppered moth, for instance, can be said to have the function of providing camouflage because, due to providing camouflage, moths with darker wings were favoured by natural selection over moths with lighter wings. According to this aetiological reading, we can thus understand the function of a biological trait in terms of the trait's selection history.

Despite its widespread acceptance, however, the aetiological analysis faces a number of difficulties.[8] On the one hand, it seems plausible that mutations of certain organisms could contribute to the working of the

5 Cf. Allen, Bekoff and Lauder (1998, 6).
6 Cf. Neander (1991a and 1991b).
7 Millikan (1984, 17). Cf. also ibid. (1989).
8 Buller (1999, 1 ff) speaks of the aetiological account as the "core consensus" on the problem of teleology in biology, while Allen and Bekoff (1995, 612) characterise it as the "standard line" in the philosophy of biology.

organism from the very moment of their emergence.[9] *Pace* the aetiolog ical analysis, they could be said to perform a function even if they had not yet undergone a selection history. Thus, reference to selection his tory does not seem necessary for the ascription of functions to certain traits. On the other hand, it is also possible that the trait of an organ once had a positive effect on the natural selection of the organ although, today, it no longer exerts that effect. The human appendix, for example, was once selected for its capacity to produce enzymes that played an im portant role in the digestion of the vegetable food of our herbivore an cestors. It thus seems plausible to say that the appendix once had, but now no longer has, a function.[10] Having the right selection history, therefore, does not appear to be sufficient for the functionality of a bio logical trait either.

Both parts of this objection seem to be based on the conviction that the functionality of an organ is connected not only with its evolutionary history but also with the role that it plays within the organism as a whole. Thus, it may be argued that it is not the history of a trait but the causal role that it performs in some complex biological system that determines whether the trait has a function or not. Rather than looking back at the way the trait developed, this approach could be de scribed as forward looking, as characterising a function in terms of the contribution it makes to a corresponding system such as an organism.

The systems theoretic approach is primarily associated with Robert Cummins' analysis of functions as causal roles in complex systems.[11] To speak of the function of a biological trait is, according to Cummins, to

9 A number of authors have introduced, in this context, a thought experiment involving "instant organisms". Regarding their structural and material proper ties, we are supposed to think of these creatures as exactly identical to ordinary organisms. They only differ from ordinary organisms insofar as they are not the product of an evolutionary history but have emerged in an instance. Although, for example, the heart of an instant organism would perform the same activity of pumping blood as the heart of an ordinary organism, on the aetiological ac count we could not say that pumping blood was a function of the instant heart. Cf. for example Neander's "instant lions" (1991b, 179), and McLaughlin's "swamp mule" (2001, 89).

10 To avoid this problem of the aetiological account in dealing with rudimentary organs, some authors have proposed to restrict the relevant selection history of a trait to its most recent history. Cf. Godfrey Smith (1994). Although this pro posal may be able to limit the criticism raised here it does not seem to avoid the difficulty in principle.

11 Cummins (1975).

ascribe to the trait a capacity in which we are interested because of its contribution to a more complex capacity P of a containing system S. Talk of functions, on Cummins' account, is thus always implicitly dependent on an "analytical context".[12] It is dependent on our interest in analysing the capacity P of a biological system S as divisible into a number of other capacities of parts of, or processes within, S. By thus focusing on the role that a biological trait plays within a more complex system, Cummins' analysis has the advantage of avoiding the difficulties of the aetiological account. Thus, traits of an organism that, in the past, were selected because of certain capacities but that, today, no longer have these capacities should *not* be considered as functional. Other traits that are not the result of an evolutionary history but that play an important role in a complex system *can*, by contrast, be considered as having a function.

It may be objected, however, that Cummins' analysis does not account for the apparent *normativity* of functional claims. When we say that the function of the heart is to pump blood, we seem to imply that the heart would not be functioning properly if it did not pump blood. Cummins' analysis, however, is interested solely in the question whether the component of a system can be described as contributing in a particular way to the working of the system on the whole, but not whether the contribution of this component occurs *contingently* or whether we could say that the component *should* indeed have had that effect. On Cummins' account, it seems, we cannot distinguish between the contingent and the non contingent contributions that a trait of an organism makes to the working of the organism on the whole.

With his "naïve fitness account" Tim Lewens presents a modified account of Cummins' analysis that aims to overcome this difficulty:

> The function of a trait t is F iff traits of type T, of which t is a token, make a significant contribution to fitness by performing F.[13]

According to Lewens, too, the function of a trait is construed as its contribution to the capacity of a corresponding system. This capacity is defined as the organism's fitness. For organic systems this means that the relevant capacity of a system is its ability to survive and reproduce. Lewens adds, furthermore, that we can only attribute a function to a trait if the trait is an example of a homology type. Two traits thus be

12 Ibid., 190.

13 Lewens (2004, 102).

long to one and the same type if they have developed out of the same trait in a common ancestor.

With this specification, Lewens' interpretation can avoid the difficulties of Cummins' causal role analysis. Lewens can distinguish *typical* from *abnormal* contributions of a trait to the corresponding system by comparing the trait with other instances of its *type*. And he can make a claim about how the trait of a system *should* commonly contribute to the working of the system on the whole. Moreover, by restricting the relevant capacity of the containing system to its fitness, Lewens' account puts a limit to the function attributions that are possible on Cummins' account. Thus, in biology, a trait has a function only if it plays a role for the ability of the system to survive and reproduce.

2. The Epistemology of Functions: Naturalisation or Analogy?

The presented theories offer two very different approaches to the problem of teleology in biology. How, then, should we decide between these competing interpretations of functional statements? Before thinking further about an answer to this question, it will be fruitful to focus, first, on what these two types of interpretation have in common. For it seems that despite their differences, both the aetiological and the causal role accounts share a number of important assumptions.[14] They agree that teleological statements in biology assume neither the existence of intention or design, nor that of final causes. Instead, they argue that teleological concepts can be rendered in completely non teleological terms. When biologists speak of natural processes by means of teleological expressions, these accounts imply, they thus refer to processes that are ultimately explicable in terms of efficient causes. The aim of proponents of both the aetiological and the systems theoretic analysis is thus the *naturalisation* of teleology.[15]

The presented accounts insist that, in principle, teleological claims could be reduced to non teleological statements. And yet, they never

14 A number of authors have also proposed pluralistic accounts that aim to combine the aetiology of functions with their causal roles in a system. Cf. Millikan (1989), Griffiths (1993), Godfrey Smith (1994) and also McLaughlin (2001).

15 This seems true both for those authors who aim to analyse how teleological language is *in fact* used by biologists and those who are engaged in the project of giving a *theoretical definition* of teleological concepts.

theless reject the aim of replacing all teleological with non teleological expressions. Although functional concepts *can* be explained in non tel eological terms, it is argued, teleological statements nevertheless have a use that would be lost if they were translated into non teleological vo cabulary. Most proponents of both aetiological and systems theoretic ap proaches therefore give some argument explaining the nevertheless ap parent difference in meaning between teleological and non teleological statements. Wright, for example, speaks of the different *focus* of teleo logical and non teleological explanations. While causal statements are concerned with the originating *causes* of a particular trait, the emphasis of teleological statements lies rather on the *consequences* of that trait. Sim ilarly, Cummins argues that the focus of function ascriptions lies on a *specific type of causal role* that the trait under investigation contributes to a corresponding complex system. Both on the aetiological and the causal role account, teleological statements thus refer to natural causal process es, yet have implications that differ from those of statements solely about efficient causes.

Even if it is true, however, that the translation of teleological into causal explanations cannot account for the particular focus of teleolog ical statements it seems that teleological claims could nevertheless have been replaced by other, non teleological, expressions. Even if, in other words, teleological statements refer to a *particular type* of causal process, could we not distinguish this type by a particular form of *causal* state ment? Why, then, do we still find expressions in biology that, on first consideration, seem to imply intentional purposiveness? Why are teleo logical expressions so persistent in biological research? And why have they not been replaced by more neutral concepts?

According to Wright, teleological concepts in science are "dead an thropomorphic metaphors".[16] They were introduced into the consider ation of nature by a metaphorical extension of concepts known from human action. It was only as these metaphors "died", Wright argues, that teleological concepts took on a literal meaning. But why, one may ask, were these metaphors introduced in the first place? Why were they used in the biological but not in any of the other natural sci ences? Cummins speaks of the *adequacy* of teleology for certain systems: teleological explanations are adequate for some (organic) systems but not for other (inorganic) systems. But what is it that makes teleology ade

16 Wright (1976, 21). Sommerhoff makes a similar proposal in the context of his *analytical biology* (1950, 67 f).

quate for the description of some but not of other parts of nature? These questions suggest that, perhaps, the project of naturalising teleology is not ultimately sufficient as an answer to the problem of teleology in bi ology. For the project seems to leave open questions about the specific character of biology which appears to make the use of teleological con cepts so *adequate*. Perhaps, then, an analysis of the use of teleological terms in biology should clarify not only *what teleological concepts stand for* but also *why they should be employed* in the biological sciences at all.

What, then, would an alternative approach to the problem of tele ology in biology look like? Rather than focussing purely on the natural isation of teleological expressions, other authors have referred to the an alogical status of these concepts. According to Lewens' "naïve fitness ac count", for example, a teleological explanation is adequate only for those natural systems for which the analogy with an artefact seems ap plicable. Although teleological formulations in biology can be explained in non teleological terms, Lewens argues, these teleological statements nevertheless imply an analogy with a purposively designed object. Sim ilarly, Michael Ruse, a defender of the aetiological analysis of function statements, argues that we explain organic nature in teleological terms precisely because it *appears* to us *as if* organisms were produced according to purposes:

> Organisms seem as if designed; […]. It is for this reason that teleological thought is appropriate in the biological sciences; and because nonorganisms do not seem as if designed, teleological thought is inappropriate in the non biological, physical sciences.[17]

According to this analogical conception, we describe nature teleologi cally because it appears to us *as if* it were planned and created by an in telligent designer. The functional description of nature is really an an thropomorphic projection onto nature. Teleological concepts have a metaphorical meaning: they read into nature ideas that we are familiar with from the context of human activity. Despite their metaphorical sta tus, however, Ruse claims that the use of metaphorical concepts is nev ertheless fruitful for biological research. It should not be abolished, therefore, but employed as a heuristic tool.[18]

This second type of approach to the epistemological status of teleo logical expressions in biology thus rejects the position that any teleolog

17 Ruse (2000, 230 f). Cf. also Ruse (1981).
18 Ruse (2000, 231). Cf. Ratcliffe (2000).

ical statement can be reduced to a non teleological claim. More funda mentally, it questions the assumption that teleological statements refer solely to causal processes in nature. Functions, purposes or programmes, according to this second position, do not really exist in nature but only in the context of our metaphorical conception of nature. The wide spread use of teleology in the life sciences is thus explained by the claim that *nature itself seems to us as if it is designed*.

In raising the question why it is that biologists use teleological lan guage, this second, analogical, account seems to me to be engaged with the original problem of teleology in biology in a much more promising way than was the first, naturalistic, approach. And yet, Ruse's account remains rather general and leaves important questions unanswered. For we may ask further why, and in what way, nature seems design like to us. Ruse provides a survey of the development of biological the ories, pre and post Darwinian. He shows that all of these theories re garded nature as if it were designed. Yet, Ruse does not explain what is so special about our view of organic nature, and hence about our bio logical theories, that requires the assumption of design in nature.[19] Sim ilarly, Lewens answers the question for which systems his account of functions is relevant by simply claiming that "[t]alk of fuctions, prob lems, and purposes appears in contexts where artefact thinking is both practical and psychologically attractive."[20] But what is it that makes the artefact analogy *practical and psychologically attractive* in one but not in another situation? Again, Lewens does not say much to explain what it is that makes the artefact analogy, and hence the use of teleolog ical vocabulary, adequate in the case of biology.

Both Ruse and Lewens remain rather vague, too, about the dispens ability of teleological concepts in biology. According to both, it at least *seems* as if the subject matter of biology requires the use of teleological concepts. As a mere metaphor, or methodological tool, however, it is not clear why teleology has persisted in biology for so long. It is not ob vious, for instance, how to understand the combination of Ruse's claims that teleology can "in principle […] be eliminated", and yet, that with

19 Ratcliffe (2000), by contrast, attempts an explanation of this requirement in ar guing that, as human beings with the particular cognitive make up that we have, we need teleological concepts for our understanding of the natural world. Ratcliffe does not give any detailed explanation, however, of how tel eological concepts are supposed to structure our interaction with the world.

20 Lewens (2004, 122 f.).

out it, "we could not say very much".[21] More thought, it therefore seems, needs to go into the analogical nature of teleology in order for this second account of the epistemological status of teleology to be convincing. In the following, I shall be concerned with such an analogical approach in more detail. I believe that we can find a useful basis for it in Kant's teleological conception of nature.

3. A Kantian Account of Natural Teleology

Kant develops his teleological conception of nature mainly in the second part of his *Critique of Judgment*, the *Critique of Teleological Judgment*.[22] There, he argues that our experience of organic nature is essentially characterised in two ways. It is distinguished by a certain kind of organisation of the parts within the whole and by a reciprocal interdependency between the individual parts. If we consider, for example, "the structure of a bird, the hollowness of its bones, the placement of the wings for movement and of its tail for steering, etc." we think of the parts of the bird as determined by their function within the organism as a whole.[23] We can only understand the bird's eye by reference to the role that it plays for the visual capacity of the bird: we regard the eye as that organ which enables the bird to see. Moreover, in their directedness towards the existence and survival of the whole, the parts of an organism seem to influence, and cause, each other. While the movement of the bird's wings is dependent on the nutrition it receives through the functioning of the digestive organs, these organs, in turn, depend on the circulation of blood in the bird's body. The generation and growth of the organism as a whole, the proper working of its parts and the regeneration of damaged organs display not only a particular organisation but also a capacity for what Kant describes as *self-organisation*. It is this twofold characteristic of our experience of organisms, as both organised and self organising that, according to Kant, makes it necessary for us to characterise them in teleological terms.

21 Ruse (2000, 231) and Ruse (1981, 307).

22 References to Kant's works use the pagination of the Akademie edition (1900 ff.) (= AA) with the exception of the *Critique of Pure Reason* (*CPR*) which is referred to by citing the pagination of the original A and B versions. Translations of the *Critique of Judgment* (*CJ*) are taken from Kant (2000).

23 *CJ*, AA V 360.

Why, then, is it impossible, as Kant claims, to explain these particularly organic characteristics in non teleological, mechanical, terms? And how can this be squared with his claim in the *Critique of Pure Reason* that anything we can in principle experience must be caused?[24] According to Kant, mechanical laws explain natural processes in terms of the way in which parts of matter act on one another by means of their forces of attraction and repulsion. Mechanical laws thus specify the necessary connection between the effect and its cause as a relation between parts of matter. In particular, they explain the way that a material complex is caused by reference to the interactions between the forces of its material parts and the way these parts combine into a material whole.[25]

For our understanding of organisms this has important implications. For to explain a complex material thing by reference to the interaction of its material parts seems to be at odds with the idea that the parts themselves are there for the complex whole, that they have a function within the whole and that their role can only be understood in the context of the whole. To think of something as an organism is precisely *not* to understand it as a complex of parts, where the parts could exist independently of the whole. As Kant says, "nature, considered as a mere mechanism, could have formed itself in a thousand different ways without hitting precisely upon the unity" essential to the particular character of an organism.[26] According to mechanical laws, the organisation of a living being would thus have to be considered as a mere coincidence. It could not be regarded as a unity of parts that are determined precisely by their contribution to the whole. Thus, by reference to mechanical laws we simply cannot make sense of the particular organic dependency relation: we cannot grasp what it means to say that a material whole should determine the form and working of its material components.

If, then, we cannot explain organisms mechanically, how can we nevertheless make sense of their specific and apparently purposive character? What, in particular, does it mean to think of the parts of an organism as *contributing to*, or as *dependent on*, the whole? According to Kant, it is clear that we cannot *know* of any purposive activity in nature in the literal sense. Rather, the concept of a purpose is merely *read into*

24 Cf. *CPR*, A189/B232 ff.

25 Kant elaborates on this conception of mechanism in his *Metaphysical Foundations of Natural Sciences* (AA IV 465 ff.).

26 *CJ*, AA V 360.

nature: we seem to consider organisms in nature *as if* they were purposively organised and striving. Thus, teleological statements seem to project onto nature a property that we are acquainted with through our own purposive activity. We are familiar with the idea that a part should be there for the sake of the whole, for instance, from the purposive work of an artisan. The artisan produces her artefact according to an idea or a plan. Through her actions, she realises her idea by ordering certain materials in such a way that they combine to make up the intended product. In this sense, the individual components of an artefact are there for the artefact as a whole because the artist *intended* them to form part of the artefact. And in a similar way, it now seems, we can also make sense of the parts of an organism as being there for, and as having a function within, the organism as a whole if we think of the organism as the intended purpose of an intelligent designer.

The artefact analogy that both Ruse and Lewens refer to thus already plays a role in Kant's teleological conception of nature. And yet, this analogy between nature and the product of intelligent design only accounts for Kant's first characterisation of organisms as displaying purposive organisation. It does not account for their apparent self organisation, that is, for the way that organisms bring about themselves. While a product of art is characterised as "the product of a rational cause distinct from the matter", an organism, by contrast, cannot be conceived as the product of an *external* cause.[27] Rather than contributing to the purpose of an external intelligence, the parts of an organism seem to strive towards a purpose *internal* to the organism itself, that is, its own existence and survival. Kant therefore argues that the comparison with the purpose of an artisan "says far too little about [organic] nature and its capacity".[28]

On Kant's account, the self organising and striving character of organisms should not therefore be illustrated by the artefact analogy but is more adequately understood on the model of our own rational and purposive activity itself.[29] This, I think, is the idea behind Kant's claim that,

27 *CJ*, AA V 373.

28 *CJ*, AA V 374.

29 This important aspect of Kant's teleological conception of living nature has not, I believe, received the attention that it deserves. Many of the seminal treatments of Kant's teleological conception of nature, such as those presented by McFarland (1970), Löw (1980) and, to some extent, also McLaughlin (1990), ignore this aspect altogether. McFarland, for instance, argues that Kant "is […] still in the grip of the design designer analogy to the extent that he believes that we

although we cannot understand the idea of a natural purpose, we can at least think of it "in accordance with a remote analogy with our own causality in accordance with ends".[30] We thus reflect about nature by means of the way we usually think about our own rational purposive actions. In order to grasp the particular self organisation of an organism, and hence the directedness of the organism towards its own existence and development, we consider it by analogy with the capacity of reason to set itself ends and to direct its activity towards these ends. In experi encing something as organic, we thus transfer the idea of the purposive activity of our own reason onto nature.

If our teleological considerations of nature are based on an analogy, however, we must conclude that we can make no assertions about the existence or absence of purposes in nature. Our very concept of a nat ural purpose is an idea that can never be proved to have a real applica tion in nature. Kant's position entails that we can merely make state ments about our teleological *reflections* about nature, but not about the teleological character of nature *itself*. According to Kant, our teleological view of nature is thus of a different kind from any mechanistic concep tion. The former, as opposed to the latter, is no objective or categorical knowledge but a subjective and analogical mode of thinking about na ture.

What, then, can we learn from Kant's discussion of the teleological conception of nature? I believe that Kant's analysis gives flesh to Ruse's rather general claim that our teleological conception of nature is merely analogical. Moreover, in claiming that our teleological conception of nature is based on an analogy, Kant does not seem to be concerned merely with explicitly teleological statements such as "the function of X is Z". Rather, Kant seems to be interested in a much more general aspect of our teleological conception of nature. Thus, on Kant's ac count, to consider something in nature as organic is *already* to view it teleologically. Merely to understand, for instance, a tree *as an organic unit* is to view its parts as parts of a systematic whole and as contributing to the existence and survival of that whole. Similarly, to understand an eye *as an eye* is already to view it as part of a larger whole on which the eye depends for its existence and with reference to which it has the function of enabling vision. Kant's discussion shows that our very *concep-*

cannot understand organisms unless we regard them *as if* they were products of a designing mind" (111).

30 *CJ*, AA V 375.

tion of living nature inevitably presupposes teleological concepts. In this sense, the very *possibility* of organisms can only be grasped in teleological terms. According to the Kantian analysis, Ruse's statement that organic nature, for us, is design like can then be understood as the claim that we can conceive of something as organic *only* by considering it teleological ly.

This general aspect of teleology with which the Kantian account is concerned can be clarified by distinguishing between two levels of our teleological conception of nature. The general teleological conception of nature that Kant focuses on may be described as the fundamental level of our experience and understanding of organic nature as such. At this level, a teleological view seems inevitable. We may distinguish from this a second level on which parts of organic nature can explicitly be described in teleological terms. It is this second level that first seemed to prompt the question of how to make sense of teleology in biology. And it is this second level, too, with which the contributions to the de bate in current philosophy of biology seem to be exclusively concerned. When authors such as Wright and Cummins, on the one hand, but also Ruse and Lewens, on the other, discuss the problem of teleology in bi ology they are thus dealing with the problem of how we are to under stand the use of explicitly teleological expressions such as "function" or "purpose". They are not concerned with the more fundamental and implicit teleological perspective that, according to the Kantian ap proach, is necessarily involved in our consideration of organisms.

The insight that the Kantian account may provide, I would there fore like to argue, is that the use in biology of explicitly teleological con cepts is based on a more general teleological perspective on nature. And it is, I believe, the inevitability of this fundamental teleological view point that can explain the use of teleological expressions at the secon dary level. Thus, it is common to talk of purposes, functions and pro grammes in biology but not in physics and chemistry. The reason is that biology, unlike either physics or chemistry, is concerned with or ganic nature and that, if Kant is right, organic nature must be considered teleologically. It therefore seems natural to use an *explicitly* teleological language to talk about things the conception of which *implicitly* assumes a teleological perspective. And again, this analysis of our teleological view of nature elucidates a statement put forward by Ruse: "Organisms seem as if designed" (on the fundamental level of experience). "It is for

this reason that teleological thought is appropriate in the biological sci ences" (on the concrete level of biological research).[31]

With this Kantian interpretation of teleology in tow, we may now come back to the question of how to decide between the two compet ing explanations of teleology discussed in the first section: should teleo logical concepts in biology be understood as referring to the evolution ary history of the trait of an organism, or should they rather be con strued in terms of the causal role that the trait plays in a biological sys tem? On the Kantian account, this question refers to the secondary level of the heuristic use of teleological concepts. On this level, speaking of functions, purposes and programmes in nature can be understood as making heuristic assumptions for the study of the causal laws of nature. It follows, therefore, that a teleological consideration of nature is *legiti-mate* if it is *useful* for the search of causal explanations. Employing teleo logical language is justified if it helps us with our causal investigation of nature. If, then, we understand the use of teleological language in the biological sciences as a heuristic means based on analogy, we do not need to decide between the aetiological and the systems theoretic ap proach. Both analyses can be accepted on the condition that both figure as helpful heuristic devices for the study of nature. As long as biologists are interested in the investigation of the selection history of a particular organic trait as well as in the causal role that the trait plays in a complex organic system teleological vocabulary may be used in both the aetio logical and the systems theoretic sense.

According to the Kantian approach, we may thus understand the use of explicitly teleological language in the life sciences as a heuristic means of structuring projects and formulating questions in biology. Teleolog ical concepts can guide our biological research into the causal processes of nature without, however, being entirely reducible to causal state ments. While providing a useful means for the study of nature, teleolog ical concepts are ultimately based on a more general teleological under standing of nature. And it is this understanding which entails an analogy with our own rational purposive activity.

31 Ruse (2000, 230 f).

4. Kantian Teleology, Evolution and Systems Theory

The Kantian account clarifies why we might want to aim for more than a naturalisation of teleology as an explanation of teleological concepts in biology. According to the Kantian approach, concepts such as "func tion" or "programme" are based on a general teleological understanding of nature which, in turn, presupposes an analogy with our own capacity to act for ends. It is the necessity of this fundamental analogy, however, which may now be questioned. For it could be argued that even the general teleological perspective that, on Kant's account, makes it possi ble for us to consider something as organic at all is explicable by refer ence to the causal processes in nature. In particular, it could be claimed that our very understanding of organisms as apparently teleological sys tems can be understood in terms of evolutionary theory. Of course Kant could not have known about the theory that Darwin published in the *Origin of Species* half a century after Kant's death. And it is precisely this ignorance, it is claimed for example by Ernst Mayr, that led Kant to believe that the explanation of organic nature was impossible in prin ciple.[32] The essential character of living beings, Mayr argues, is explica ble not in purely mechanistic terms but by means of a historical analysis of their evolutionary development.

Thus, the first aspect of Kant's characterisation of organisms, the ap parently purposive arrangement of the parts of an organism within the organism as a whole, could be explained as an "adaptation" that is the result of variation and natural selection over a long period of time. Evo lution produces organisms that are well adapted to their environment and that, therefore, seem as if they were purposively arranged in order to survive in their environment. Yet, natural selection, Dawkins' "blind watchmaker", does not need to be understood in teleological terms. It is blind "because it does not see ahead, does not plan conse quences, has no purpose in view".[33] Furthermore, the second aspect of Kant's characterisation of organisms, the apparent directedness of an organism towards its own existence and survival and the way in which the organism develops through the mutual interaction of its parts, can be explained by reference to the historically evolved genetic programme of the organism. And since the concept of the genetic pro gramme is itself explicable in purely physical terms there is no need to

32 Cf. Mayr (1974) and (2002).
33 Dawkins (1988, 21).

resort to a teleological perspective in order to understand the organic in nature.

Mayr's objection differs from the aetiological analysis of teleological terms. For the objection does not resort to the evolutionary theory in order to *explain the meaning* of explicitly teleological terms, as proposed by Neander. Nor does the present criticism refer to the concept of evo lution by natural selection as a basis for the *definition* of teleology, as ar gued by Millikan. The theory of evolution is rather brought into play in order to give an *a posteriori* explanation of the apparently teleological character of organisms. According to Mayr, the seemingly teleological character of living beings is thus explicable in naturalistic terms by means of the Darwinian theory of evolution and the results of modern genetics:

> Darwin removed the roadblock of design, and modern genetics introduced the concept of the genetic programme. Between these two major advances the problem of teleology has now acquired an entirely new face.[34]

Modern evolutionary biology can, on this view, give a naturalistic ac count of the characteristics that, according to the Kantian approach, were described by means of the teleological analogy. Kant's teleological perspective that was claimed to be inevitable, could thus be considered as a merely useful or heuristic, but not necessary or irreducible, view of nature. Ruse's statement according to which we explain organisms tel eologically *because they seem as if designed* could thus be explained further by arguing that organisms seem as if designed *because they have evolved through variation and natural selection*.

Does this show, then, that Darwin (together with Watson and Crick) can be regarded as the *Newton of the blade of grass* which Kant thought to be impossible in principle?[35] Can the teleological conception of organisms, *pace* Kant, be naturalised after all? In order to answer this question, we need to distinguish very carefully between two concep tions of the teleology of nature. For, on the one hand, it seems correct that Darwin's theory refutes a metaphysically interpreted concept of tel eology according to which the world is construed as a product of an in telligent and purposively acting cause. Evolutionary theory thus proves unwarranted the idea of a god who provides the organism with the or gans necessary for its survival and who thereby adapts the organism to its

34 Mayr (1974, 113).
35 Cf. *CJ*, AA V 400.

environment. On the other hand, it is less clear that the theory of evo lution refutes the necessity of an epistemologically or conceptually inter preted function of teleology. For evolutionary theory does not seem to be concerned, as Kant is, with the question of how we should under stand the very *concept* of an organism. It does not seem to address the issue of how to conceive of the apparently purposive organisation and goal directedness of living beings. Rather, as Georg Toepfer has pointed out, it seems that in order to comprehend what evolution consists in we must *already* know what an organism is.[36] Yet, if the theory of evolution *presupposes* an answer to the question of living beings it cannot replace the teleological conception of organisms proposed on the Kantian ac count.[37]

It could be criticised, however, that although Darwin himself did not know how life emerged or how the first organisms originated, latest results in genetics and molecular biology have made great advances in this respect. While the theory of evolution by natural selection could be employed in order to naturalise the concept of the adaptation of an organism to its surrounding, the questions of how life first originated on earth and how individual organisms developed in such an apparently goal directed manner could be explained further by reference to devel opments at the molecular and genetic level. The theory of evolution, it could thus be argued, provides a naturalisation of the apparently teleo logical concept of an organism only in combination with molecular bi ology and genetics.

And yet, even if it is possible to explain the organisation and devel opment of organisms in purely naturalistic terms, it seems that we never theless first have to identify the organism by distinguishing it as a natural unity from its surroundings. We thus first of all need to identify some thing as a living individual before we can investigate its causes and its history. But it seems to be precisely this identification which is made possible by the teleological perspective analysed on the Kantian account but not by the evolutionary explanation of the apparently teleological character of organisms. Reference to the theory of evolution, an essen tially empirical theory, thus always seems to remain on the level of con

36 Toepfer (2004, 311 ff.).

37 This discussion has nothing to do, of course, with the historical question whether Kant should be read as a forerunner of Darwin. Haeckel (1889, 89 f.) counted especially the early Kant as one of Darwin's predecessors. A ref utation of this view is developed by Lovejoy (1959).

crete empirical explanations. Evolutionary explanations can clarify which natural processes brought about the existence of a particular thing that we experience as a purposively striving organism. Evolution ary explanations cannot, however, say anything about the epistemolog ical reasons that enable us to pick out something as a purposively organ ised unity in the first place. It is these latter reasons, however, with which the Kantian conception of teleology is concerned.

One might object at this point that rather than explaining the teleo logical appearance of living beings in evolutionary terms, we could nat uralise our teleological understanding of organisms by reference to the particular structures that define such apparently purposive systems. What, on the Kantian theory, was described as an analogical account of nature could thus be explained by means of the actual causal roles that figure in organic systems. This is the position defended by Toep fer.[38] He agrees with Cummins that the function of a trait is to be con strued in terms of its causal roles in a corresponding system. His proposal differs from the causal role accounts discussed in Section 1, however, in sofar as it does not regard the ascription of functions or purposes as an *explanation* of a particular natural trait but rather as the *identification* of certain natural systems. In contrast with the systems theoretic accounts discussed at the beginning of this paper, the primary task of teleology lies, on Toepfer's account, in the identification of a particular class of objects. Teleology, he claims, does not *explain* the working or develop ment of organic nature but offers a *description* of those systematic con nections between natural processes that we regard as teleological. Only by clarifying the inner structure of certain objects, he argues, is it possible to understand something as a teleological system at all. The identification of organisms is thus based, according to this approach, on the causal interdependence of the various parts of an organic system and does not require the Kantian analogy with our own rational capaci ty. We can thus explain Ruse's claim that *organisms seem to us as if they were designed* on the grounds that *they display a particular structure defined by what Toepfer calls circular causal processes*.[39]

38 Toepfer (2004, 320 ff.).

39 This "inner structure" of an organic system may be taken to refer to the way in which different parts of an organism influence and cause each other as well as the way in which external material is incorporated into the organism, enabling growth and the regeneration of damaged parts. Moreover, the particular causal structure of organisms may also be taken to include the way in which they pro

Can we conclude, then, that even if it is not the theory of evolution, it is the systems theoretic approach that can explain away the necessity of an analogical understanding of teleology? On the one hand it seems cor rect that the systems theoretic approach can explain the causal structures of the natural objects that we experience as organic beings. On the other hand, however, our experience of organisms seems to entail more than the experience of causal structures. Thus, the systems theoretic interpre tation may elucidate the way in which the individual parts of an organ ism depend on, and causally influence, each other. And yet, the ap proach does not seem to account for the apparent striving and directed ness which we associate with those characteristics that distinguish a liv ing organism from a dead object. It is not obvious, therefore, that the description of empirically cognisable causal connections exhaustively presents the conditions for our identification of organisms.

What seems to distinguish Toepfer's account from the Kantian ap proach is once more that on the former, the systems theoretic descrip tion of nature is presented as on the same epistemological level as the scientific study of circular causal relations. The investigation of the caus al roles that a particular trait of an organ contributes to the working of the corresponding organic system is, at the same time, an investigation into the conditions that make something an organism at all. On the Kantian account, however, the fundamental teleological experience of organic nature is distinguished from the investigation and description of the causal structures of natural objects. According to Kant, the teleo logical identification of organisms in terms of an interpretative reflection *first makes possible* the investigation of causal processes as processes that go on within an organism. And insofar as the former is a condition of the latter, the two occupy a different epistemological status. The natu ralistic approach to the systematic and organisational aspects of organic nature does not therefore seem to prove redundant the teleological anal ogy proposed on the Kantian account. The Kantian analogical approach to teleology introduces a focus that is not captured by any empirical in vestigation of nature. It is the focus on the very conceivability and pos sibility of the living in nature. In this sense, we can understand Hannah

duce offspring—either on their own or with a mate. The "inner structure" may then be understood to refer to that of both parent(s) and offspring. Toepfer's proposal could thus also be read to account for the definition of life that relies on the processes of metabolism and the reproduction of organisms. Yet, even if it is understood in this sense, it seems that the objections discussed below still apply.

Ginsborg's claim that evolutionary theory (and, I would add, systems theory) "would offer an empirical answer to what is, in effect, a concep tual problem".[40]

5. Kantian Teleology in Biology: Some Conclusions

The Kantian approach suggests, then, that all attempts to give a causal explanation of teleological concepts in the biological sciences should only ever be understood as secondary explanations of something that is already conceived of according to a teleological analogy. Teleological concepts in biology, on the Kantian account, thus have a twofold func tion. On the one hand, they are heuristic tools for the discovery of nat uralistic causal explanations. On the other hand, however, they cannot be reduced to these purely naturalistic explanations because they are based on a more general teleological understanding of nature by analogy with our own purposive activity. In order to understand nature *as alive* we thus always have to judge it teleologically.

What, then, does this understanding of teleological concepts mean for the biologist? Should she go on using teleological concepts as a help ful heuristic tool? And in what sense are the teleological concepts of the Kantian analogical account compatible with our conception of the bio logical sciences? The Kantian account, it seems, is compatible, and hence can allow for, an analysis of the organism's workings in terms of its inorganic material parts. The Kantian account can allow for this kind of explanation insofar as it would be an explanation of the material processes that go on within the organism. The account must reject such a mechanical explanation, however, as an explanation of the essential character of the organism as a living being. For, as we have seen, the experience of organisms is characterised in a way that cannot be ex plained purely by reference to mechanical laws. The teleological view thus implies that there is something about our ordinary experience of empirical nature which falls outside the realm of the scientifically expli cable. It is this particular character of living nature which we cannot ex plain, but can only elucidate by means of analogy. We may thus think of these two conceptions of nature, the causal mechanical and the teleo logical, as two different stories about, or perspectives on, one and the same object. Although the teleological conception seems inevitable

40 Ginsborg (2006, 467).

for the consideration of organic nature, a non teleological, mechanistic, explanation of the causal processes that determine the same object is possible. The Kantian account could thus justify teleology in biology by claiming that both teleology and mechanism are two convincing but mutually irreducible perspectives on nature.[41]

Granted, then, that our conception of nature implies two perspec tives, mechanistic and teleological, it might be objected that the teleo logical perspective is simply not relevant to biology. It may be argued that the task of biology is to deal with a conception of nature that is ul timately explicable in naturalistic terms. If we agree on the inevitability of the teleological perspective for an understanding of organic nature, however, this objection must be mistaken. For the project in biology to give explanations of nature in purely naturalistic terms can only be *about* organic nature if it entails a teleological perspective. We need a teleological outlook on nature in order to be able to think of ourselves as investigating, for instance, a tree or a bird's eye. Even in order to ex amine the causal processes that go on in an organic material object, we need to be able to *pick out* the object as an organised whole in the first place. Once we have allowed the teleological perspective we can then make use of teleological expressions as heuristic tools for the investiga tion of nature. In asking for the function of a particular organ, for in stance, we may be interested in an explanation of this function in terms of the underlying causal processes in nature. What exact aspect of the causal processes we are interested in when asking questions in tel eological terms may vary between cases. Following Cummins, when we raise the question "what is the function Z of organ X in system S?", we may be aiming at investigating the contribution that X makes to a par ticular capacity of S. Alternatively, following the aetiological account, we may be interested in the reasons for the existence of X, explicated in terms of the evolutionary history of X with respect to Z. The analyses presented by the causal role account and the aetiological theory can thus give us guidance for understanding what biologists may be expecting from their biological research. We should not assume, however, that what biologists expect to gain from an inquiry described in teleological terms is all there is to what those terms imply. The general teleological perspective, it seems, remains irreducible even for biology.

41 The necessary and mutually irreducible status of the mechanistic and teleolog ical perspectives is discussed in more detail in Breitenbach (2008).

The Kantian account can thus throw some new light on current dis cussions in the philosophy of biology. While others have argued that the Kantian conception of teleology cannot present any help to contempo rary philosophy of biology because Kant does not interpret teleology naturalistically[42], I suggest that Kant can advance the debate about tele ology in biology *precisely on the grounds* that he does *not* interpret teleol ogy naturalistically. The original perspective that the Kantian account can add to the debate is that teleological concepts have the function of both a useful heuristic in the search for causal explanations and a nec essary and irreducible perspective on living nature.

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42 Cf. Zammito (2006).

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Kant's Teleological Conception of Philosophy and its Development

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Abstract

This paper traces Kant's teleological conception of our own faculties from the first through the third Critique. The central argument is that while in both works Kant assumes that if reason does not have a proper constitutive role then it must have a proper regulative role, in the first work Kant postulates separate roles for theoretical and practical reason, the for mer strictly regulative but the latter less clearly so, but in the third critique he argues that the genuine purpose of pure reason is not bifurcated between a regulative theoretical use and a canonical or constitutive practical use, and instead offers a unitary but regulative conception of the development of human freedom as the only humanly conceivable goal of both nature and morality, to which we are inevitably led whether we start from natural science, moral philosophy, or even aesthetics.

1. Kant's Teleological Premise

It might be tempting to think that Kant affirmed a teleological concep tion of nature as wisely designed for a beneficent purpose in pre critical works such as the *Universal Natural History and Theory of the Heavens* (1755) and *Only Possible Premise for a Demonstration of the Existence of God* (1763), that once he had been awakened from his dogmatic slum ber and found his critical voice he altogether rejected teleology, but that he had to make room for it again in the *Critique of the Power of Judgment* (1790) in order to resolve the specific difficulty of understanding organ ic life. That would seriously underestimate the continuous importance of teleological assumptions for Kant. A teleological point of view was central to Kant's mature conception of the method of philosophy itself as well as to his conception of the practices of natural science, morality, history,[1] and even aesthetics, in spite of the fact that the concept of

1 Standard works on Kant's teleology emphasize its role in Kant's substantive conceptions of nature and history without emphasizing its metaphilosophical

"purposiveness without purpose" is central to the latter.[2] That is, the as sumption of the purposiveness of our own mental powers is central to Kant's critical practice of philosophy itself just as the assumption of the purposiveness of nature for human beings is indispensable to his conception of the practices of natural science, morality, history, and aes thetics. Nevertheless, Kant's use of teleological assumptions and his characterization of their status underwent some subtle but important changes during the critical period.

In the *Critique of Pure Reason*, Kant approached philosophy itself tel eologically, basing the entire structure and argument of the book on the assumption that "Everything grounded in the nature of our powers must be purposive and consistent with their correct use, if only we can guard against a certain misunderstanding and find out their proper direction" (A 643/B 671).[3] This assumption leads him to the view that even though the three subjects of traditional *metaphysica specialis* rational psychology, rational cosmology, and rational theology are nothing but tissues of illusion based on the false premise that pure reason alone can yield cognition of objects independent of intuitions of objects given through sensibility, and indeed knowledge of unconditioned ob jects because it supposedly yields knowledge independent of the always conditioned character of sensible intuitions, pure reason must neverthe less have a proper use when its role is correctly understood. This proper use, in turn, consists in the employment of pure reason to provide reg ulative principles for the pursuit of systematic unity in the theoretical cognition of nature rather than constitutive principles for the cognition of unconditioned objects beyond nature, and, in the practical domain, both a canon in the form of moral law and also a postulation of uncon

role in Kant's conception of the practice of philosophy; see for example Stadler (1874), McFarland (1970), and Düsing (1986). Dörflinger (1995) does discuss the "underlying teleology" of the first *Critique*, but only in connection with Kant's system of categories; he does not discuss the teleological basis of Kant's conception of the relation between theoretical and practical reason, which I will emphasize. Langthaler (1995), by contrast, discusses Kant's "prac tical teleology" without connection to Kant's metaphilosophical and theoretical use of teleological assumptions.

2 For a recent approach to Kant's aesthetics focusing on this concept and the con nection between Kant's aesthetics and his teleology, see Zuckert (2007).

3 The *Critique of Pure Reason* (*CPR*) will be cited from the translation by Paul Guyer and Allen W. Wood (Kant, 1998), with passages located as is customary by the pagination of the first, 1781 edition ("A") and the second, 1787 edition ("B").

ditioned objects after all the free and immortal soul and God as the grounds of the possibility of the transformation of the world of nature into a "moral world." In the *Critique of Pure Reason*, however, Kant mentions only once the "unity of reason" on which he insists in the *Critique of Practical Reason*, seven years after the first edition of the former work, and thus barely makes explicit a connection between the regula tive use of reason in the theoretical pursuit of knowledge of nature and the practical use of reason in the transformation of the natural world into a moral world.[4] The *Critique of the Power of Judgment*, however, begun almost immediately upon the completion of the *Critique of Practical Reason*, emphatically rejects a bifurcated conception of the purpo siveness of pure reason. For in the third *Critique*, beyond its detailed analyses of several forms of aesthetic judgment and of the peculiarities of our comprehension of organisms, Kant makes two key general moves: first, he revisits both his account of the use of regulative princi ples of theoretical reason in natural science and his theory of the postu lates of pure practical reason within the framework of his new concep tion of reflective judgment, thereby implying that in some way both the guiding principles of natural science and the leading principles of mor ality must have regulative rather than constitutive status; and second, he provides a unified teleology of nature and morality by means of his ar gument that our application of the concept of purposiveness *in comprehending nature* inevitably leads us to the idea of an ultimate purpose for nature the only candidate for which is our *own moral development*. Most of the discussion of the regulative theoretical use of reason in the first *Critique* proceeds without any reference to its practical use, while in the second *Critique* a teleological conception of nature is derived solely from moral considerations. The third *Critique* argues that the genuine purpose of pure reason is not bifurcated between a regulative theoretical use and a canonical or constitutive practical use, and instead offers a uni tary but regulative conception of the development of human freedom as the only humanly conceivable goal of both nature and morality, to which we are inevitably led whether we start from natural science, moral philosophy, or even aesthetics.

4 For a bifurcated interpretation of the role of ideas of reason in Kant's theoretical and practical philosophy, see Rawls (2000, 310). Neiman (1994) follows Rawls in exploring parallels between Kant's conceptions of theoretical and practical reason rather than their ultimate unity.

Kant's ultimate conception of the critical philosophy is thus a regu lative teleology driven by a single and singular conception of the proper use of pure reason.[5] It is not founded on a providentialist assumption of the sort that we could have expected from a traditional Christian or other monotheist, namely an assumption that we can be certain that na ture is the manifestation of a divine purpose although we cannot know what that divine purpose is. Nor is it founded on the kind of assump tions that are to be found in the precritical teleologists foremost in Kant's own immediate intellectual world, namely Leibniz and Wolff, who held that nature was created in accordance with a divine purpose that *is* knowable, namely the creation of a universe with the greatest va riety consistent with the simplest laws (Leibniz) or of a world that should serve as a mirror of the glory of God to human beings as purely cogni tive subjects (Wolff).[6] In Kant's critical teleology, the purpose that we must suppose to underlie all of nature including our own human nature is not an unknowable divine purpose, but the purpose of our own real ization of the primary and secondary objects of morality itself, that is, first, autonomy, or our freedom governed by a law that we give our selves, and second, the highest good, the greatest possible happiness of the human species consistent with and the product of the realization of human autonomy; but at the same time the principle that this is the fundamental purpose of all nature cannot be taken as a constitutive principle for speculative metaphysics, but must be interpreted as a reg

5 We know that in the drafts of an uncompleted final work preserved under the rubric of the *Opus postumum*, Kant was moving from the idea of a "Transition from the metaphysical foundations of natural science to physics" to a complete restatement of the critical philosophy itself (see Kant (1993), e.g., 21:373 and 21:34; pp. 10, 237). I would venture that had he been able to complete this re statement, it would have reflected the unitary conception of the proper purpose of pure reason suggested here on the basis of the *Critique of the Power of Judg ment*, but I will not be able to argue that case here.

6 For Leibniz's conception of God's purpose in creating the universe, see *Monad ology*, §58; in Leibniz (1969, 648); for Wolff, see Wolff (1726), II. Capitel, §8: "The chief aim of the world is this, that we should cognize God's perfection from it (see *Metaphysics*, §1045). If **God** would achieve this, then he must also have so arranged the world that a rational being could draw from contem plation of it grounds from which one can infer with certainty his properties and whatever else one can cognize about him." Wolff's reference is to his *Vernünff tige Gedancken von Gott, der Welt, und der Seele des Menschen* (1720), §1045, the so called "German Metaphysics."

ulative principle of both theoretical and practical reasoning, as well as of historical and even aesthetic judgment.

2. The Teleology of the *Critique of Pure Reason*

I will not spend much space documenting the constitutively teleological character of Kant's earliest thought. In both the *Universal Natural History* and *Only Possible Premise* Kant argues against any view that God achieves his purposes by making exceptions to the ordinary laws of nature and for the view that he accomplishes his purposes precisely through his wise design of the ordinary laws of nature, and thus argues for the conclusion that we are entitled to view what is produced by nature as purposive and good because it is the product of wisely benevolently and competent ly designed laws, without restricting the status of this assumption to that of a merely regulative principle. This passage from the *Only Possible Premise* is representative:

> The things of nature, even in the most necessary determinations of their internal possibilities, display the characteristic mark of dependency upon that Being, in whom everything harmonises with the attributes of wisdom and goodness. One may expect to find harmony and beauty in the combi nation of natural things, and necessary unity in the many advantageous re lations of a single ground to many appropriate laws. Where nature operates in accordance with necessary laws, there will be no need for God to correct the course of events by direct intervention; for, in virtue of the necessity of the effects which occur in accordance with the order of nature, that which is displeasing to God cannot occur, not even in acordance with the most universal laws. For how could the effects of things be contrary to the will of God […] while their essential relations, as the grounds of what is necessary in the order of nature, derive from that in God which harmonises most fully with His properties in general. And so all the changes which take place in the world and which are mechanical in character […]—all such changes must always be good, for they are naturally necessary.[7]

The critical philosopher who would reject all theoretical arguments for the existence of God, even while allowing that the "physico theological proof" or the argument from design is a natural tendency of human thought (*CPR*, A 620 30/B648 58) could not continue to accept this confidently unqualified appeal to the beneficial intentions of God

7 Kant, *Only Possible Premise for a Demonstration of the Existence of God*, Fourth Re flection, §1, 2:110; Kant (1992, 152).

as manifest in the laws of nature. But the mature Kant's rejection of speculative arguments for the existence of God does not eliminate tele ology from his thought; it rather calls for the revision of his conception of teleology. In this section, we will examine the form that Kant's tel eological thinking takes in the *Critique of Pure Reason.*

Kant outlines his view about the theoretical function of pure reason at the beginning of the second part of the Appendix to the Transcen dental Dialectic, which bears the tellingly teleological title "On the Final Aim [*Endabsicht*] of the Natural Dialectic of Human Reason." This section opens with another statement of Kant's conviction that even though pure reason can give rise to a dialectic of illusory argu ments, it must have a proper function:

> The ideas of pure reason can never be dialectical in themselves; rather it is merely their misuse which brings it about that a deceptive illusion arises out of them; for they are given as problems for us by the nature of our reason, and this highest court of appeals for all rights and claims of our speculation cannot possibly contain original deceptions and semblances. Presumably, therefore, they have their good and purposive vocation in the natural pre disposition of our reason. (*CPR*, A 669/B 697).

Kant's juridical reference to reason as "the highest court of appeals for all rights and claims of our speculation" implies that it is reason itself that critically scrutinizes unjustifiable claims of pure speculation the *Critique of Pure Reason* is a critique *of* the claims made by pure reason that is itself carried out *by* reason but also that reason plays a vital role in securing the rights of legitimate theoretical cognition. The latter is the point that Kant stresses as he continues. For his argument is that the positive function of reason is to establish and "preserve the greatest systematic unity in the empirical use of our reason," but that this in turn requires us to conceive of a "ground or cause" for this systematic unity, that is, "that the things in the world must be considered **as if** they had gotten their existence from a highest intelligence" (*CPR*, A 670 1/B 698 9). And this last we are free to do, because, as Kant had pointed out at the end of "The Ideal of Pure Reason," his critique of the tradi tional theoretical arguments for the existence of God, "the same grounds for considering human reason incapable of asserting the exis tence of such a being [...] also suffice to prove the unsuitability of all counter assertions" (A 640 1/B 668 9): we can no more theoretically disprove than we can prove the existence of God. Kant concludes his sketch of his analysis of the positive function of reason by insisting that it results in regulative rather than constitutive principles:

> Now if one can show that although the three kinds of transcendental ideas (**psychological**, **cosmological**, and **theological**) cannot be referred di rectly to any object corresponding to them and to its **determination**, and nevertheless that all rules of the empirical use of reason under the pre supposition of such an **object in the idea** lead to systematic unity, always extending the cognition of experience but never going contrary to experi ence, then it is a necessary **maxim** of reason to proceed in accordance with such ideas. And this is the transcendental deduction of all the ideas of spec ulative reason, not as **constitutive** principles for the extension of our cog nition to more objects than experience can give, but as **regulative** princi ples for the systematic unity of the manifold of empirical cognition in gen eral, through which this cognition, within its proper boundaries, is cultivat ed and corrrected more than could happen without such ideas, through the mere use of the principles of understanding. (*CPR*, A 671/B 699).

There are two parts to Kant's thought here. First, the attempted use of pure reason to provide knowledge of an *unconditioned object beyond the limits of ordinary experience*, whether the absolutely unitary self of rational psychology, the absolutely complete world whole of rational cosmolo gy, or the absolutely necessary and perfect being of rational theology, is illusory, but the use of pure reason to provide the principles for the es tablishment of *systematic unity within the limits of ordinary experience* is both justified and necessary.[8] This use, however, applies directly only to the ideas of the absolute self and the absolute world whole: these can be conceived of as ideals of systematic unity to which our empirical knowl edge of the worlds of inner and outer sense can and must approach asymptotically even if never completely. The idea of God, however, re mains that of an object distinct from the worlds of inner and outer sense, so it cannot be equated with an ideal of the systematic unity of our knowledge of either of those. Instead, and this is Kant's second thought, it is the idea of a ground or source of the systematic unity of those two domains, which makes our progress in knowledge of their systematic unity possible. And then, Kant seems to conclude, since the ideals of sys tematic unity in the worlds of inner and outer sense remain regulative rather than constitutive principles, never completely given but always guiding our continuing acquisition of knowledge of those domains, the idea of God or the "highest intelligence" as the ground of that sys tematic unity also remains regulative rather than constitutive.

8 Michelle Grier also distinguishes between reason's idea of the unconditioned as the source of dialectical illusion and its idea of systematic unity as the key to its regulative role; see Grier (2001, chap. 8, 263–301).

This analysis obviously raises two big questions: First, what role is the regulative principle of systematic unity actually supposed to play in our knowledge of the worlds of inner and outer sense? Second, why must we posit the existence of God or a highest intelligence, even if only regulatively, in order for those ideals to play their role? Kant provides some detail about what the ideal of systematic unity in experience of the worlds of inner and outer sense actually consists in: in the first half of the Appendix, the "maxim" always to seek systematic unity is translated into the more specific rules always to seek more and more homogeneity in empirical knowledge, that is, to subsume multiple lower order concepts under fewer higher order ones, to seek more and more specificity in empirical knowledge, that is, to find more and more lower order concepts under higher order ones, and to seek more and more affinity, that is, to find more and more intermediate levels of con cepts between lower and higher order ones (*CPR*, A 651 63/B 680 91). But just *why* we need to seek these relationships among our empir ical concepts is less than clear. Anticipating the third *Critique*'s distinc tion between determinant and reflective judgment, the Appendix in the first *Critique* distinguishes between the "apodictic" use of reason, which derives or determines particulars from universals that are already given, and the "hypothetical" use of reason, which seeks to discover or infer universals rules or concepts from "several particular cases" that are given (*CPR*, A 646 7/B 674 5). The hypothetical use of reason, Kant then observes, is "only regulative, bringing unity into particular cognitions as far as possible and thereby **approximating** the rule to universality" (*CPR*, A 647/B 675). The principle that we should seek systematic unity in all our knowledge, in the specific forms of homoge neity, specificity, and affinity, is something that we can satisfy only ap proximately, and is merely regulative in that sense. But why is it neces sary at all why is it necessary that reason serve the positive function of providing this regulative principle? About this, Kant is vague. Continu ing the present passage, he says that "The hypothetical use of reason is therefore directed at the systematic unity of the understanding's cogni tions, which, however, is the **touchstone of truth** for its rules [...] sys tematic unity (as mere idea) is only a **projected** unity [...] this unity helps to find a principle for the manifold and particular uses of the un derstanding, thereby guiding it even in those cases that are not given and making it coherently connected" (*CPR*, A 647/B 675). A few pages later, in a well known passage, he adds that

> [t]he law of reason to seek unity is necessary, since without it we would have no reason, and without that, no coherent use of the understanding, and, lacking that, no sufficient mark of empirical truth; thus in regard to the latter we simply have to presuppose the systematic unity of nature as objectively valid and necessary. (*CPR*, A 651/B 679).

Neither of these passages makes a very clear claim, nor is it clear that they make the same claim: the first might be taken to suggest that the idea of systematic unity functions heuristically, guiding us to expand our empirical knowledge from concepts or judgments that we have al ready formed to deal with particulars with which we are familiar to sim ilar or analogous concepts or judgments that can be applied to newly en countered experiences; the second might instead be taken criterially, that is, as suggesting that coherence among empirical truths is a "suffi cient mark" of the truth of any of them considered individually, or a coherence theory of truth.[9] In other words, the first suggestion would be that the ideal of systematic unity plays a role in the *generation* of can didates for empirical knowledge we generate candidates for empirical knowledge by seeking to fill in places in an as yet incomplete system of empirical concepts or judgments while the second suggestion would be that systematic unity plays a role in the *confirmation* of candidates for empirical knowledge we determine that any particular empirical hypothesis is actually true on the basis of its coherence with other em pirical hypotheses, presumably other hypotheses that we have already accepted as true in virtue of their coherence with each other in the chronological growth of empirical knowledge.

These interpretations of Kant's suggestion about the indispensable positive role of the ideal of systematic unity produced by pure reason are themselves highly speculative. The second of them, however, at least has the virtue of making sense out of a claim that Kant makes im mediately preceding the words in question. The paragraph that ends with the claim that systematic unity is a sufficient mark of empirical truth begins with the claim that

> [i]n fact it cannot even be seen how there could be a logical principle of rational unity among rules unless a transcendental principle is presupposed, through which such a systematic unity, as pertaining to the object itself, is assumed *a priori* as necessary. For by what warrant can reason in its logical

9 Kant had previously excluded the possibility that *general* logic could afford a "sufficient criterion of truth" through the principle of non contradiction (*CPR*, A 151/B 191), but left open the possibility that *transcendental* logic might ultimately afford such a criterion.

> use claim to treat the manifoldness of the powers which nature gives to our cognition as merely a concealed unity, and to derive them as far as it able from some fundamental power, when reason is free to admit that it is just as possible that all powers are different in kind, and that its derivation of them from a systematic unity is not in conformity with nature? (*CPR*, A 650–1/ B 778–9).

Kant's contrast between "logical" and "transcendental" principle here is the contrast between principles that are supposed to structure our thought about objects and principles that are supposed to structure the objects thought about, or nature itself, here conceived of as existing independently of our thought about them, thus leaving aside the niceties of transcendental idealism; and his claim is then that it makes no sense to seek systematic unity among our concepts of or judgments about nature unless we suppose that there is systematic unity among the forms of nat ural objects themselves, whether we have yet found it or or not. Why Kant should think this if the use of the ideal of systematic unity is en tirely heuristic is not at all clear: we can certainly seek to find new con cepts that are coherently related to our present ones without any ad vance or *a priori* guarantee that we will find them, as long as we do not have any *a priori* reason to believe that we cannot find them; in other words, if the function of the ideal of systematic unity were purely heuristic, then it would seem that we could use the logical principle of systematic unity without a transcendental principle of systematic unity. But if we use the ideal of systematic unity as a basis for claims of empiri cal truth, then, since we certainly make particular truth claims about na ture without possessing anything approaching complete knowledge of nature, we may have to posit that there is systematic unity in nature itself before we have completely discovered it in order to explain the truth of the particular judgments that we do claim to know; in other words, the transcendental principle that there is systematic unity in nature may be a condition of our particular truth claims when these outrun the evidence actually available within the structure of our current empirical knowl edge.

Perhaps, however, Kant does not have anything as specific as this in mind, and is instead only invoking what is a very old pattern of thought for him, namely the assumption that possibility always demands a ground in actuality. This was the "only possible premise" for Kant's pre critical demonstration of the existence of God: after he had rejected the traditional ontological argument, as an inference from the possibility of God himself, as represented by the concept of God, to the actual and

necessary existence of God, and the traditional cosmological argument, as the inference from the actual existence of anything at all to the actual necessary existence of God, he accepted the inference from the *possibility* of anything to the actual and necessary existence of God as a ground for that possibility.[10] In the opening parts of the "Ideal of Pure Reason" in the first *Critique*, Kant had rejected that earlier argument on the ground that the concept of the "sum total of all possibility" is just an ideal of pure reason, not something actually given (*CPR*, A 573 4/B 601 2), so the idea of a single ground for the sum total of possibility, a necessary and most real being, is also just an ideal of reason, not some thing actually given by it (*CPR*, A 579/B 607). But he did not explicitly reject the principle that any possibility needs a ground in something ac tual and indeed necessary, only the supposition that we are given a sum total of possibility from which we can infer to the existence of an *ens realissimum* as the only possible ground thereof. That being so, Kant can then suppose that it remains natural for us to move from the *regulative ideal* of even the *possibility* of a complete systematic unity of possibli ties for knowledge to the *regulative ideal* of a ground for them, a God or highest intelligence as their source. Kant's inference would then be from the "logical principle" of the possibility of a systematic unity of cogni tion to the "transcendental principle" of a systematic unity of possibil ities in nature itself, what is to be known, and from there to the exis tence of a highest intelligence as the ground of the latter but since the line of inference would begin with a regulative principle, so to speak in the regulative mode, it would continue in that mode, and thus end up with the idea of God as itself still a regulative ideal, to be sure not one that directly regulates our pursuit of knowledge in the way that the ideal of systematic unity or its constitutent principles of ho mogeneity, specificity, and affinity do, but one that is conceived of as underlying that ideal.

The details of my account here are sketchy, because the details of Kant's account are sketchy. Kant himself seems to have recognized this, because, as we will see, he added at least one significant suggestion to this account as late as the final version of the Introduction to the *Critique of the Power of Judgment*, hastily composed as the body of that text was already at the printer. We will come back to that in Section 4. For

10 See *New Elucidation of the First Principles of Metaphysical Cognition*, Proposition VII, 1:395, in Kant (1992, 15–16), and *Only Possible Premise*, Section I, Third Reflection, §2, 2:83, in Kant (1992, 127–8).

now, let us see how Kant switched gears from the theoretical to the practical use of pure reason in the *Critique of Pure Reason*, and offered an account of the positive function of pure practical reason that is not directly connected to his account of the positive function of pure the oretical reason.

Kant's discussion of practical reason in the first *Critique* is located in the second chapter of the "Doctrine of Method," the "Canon of Pure Reason."[11] His discussion of practical reason is provided under this title because by a "canon" Kant means "the sum total of the *a priori* principles of the correct use of certain cognitive faculties in general," and his claim is that it is only in the form of practical reason that pure reason has *a priori* principles that it can use with legitimacy and certitude independ ently of any confirmation on the part of sensibility. He introduces his claim that practical reason gives rise to a canon as the fulfilment of his teleological expectation that pure reason must have a proper function. The chapter begins with the confession that "It is humiliating for human reason that it accomplishes nothing in its pure use, and even re quires a discipline to check its extravagances and avoid the deceptions that come from them." But he immediately observes that it should give reason some "confidence" that it is itself the source of its own "dis cipline," that its critique is a self critique. So emboldened, he then re iterates his conviction that reason must have a positive use:

> Nevertheless, there must somewhere be a source of positive cognitions that belong in the domain of pure reason, and that perhaps give occasion for errors only through misunderstanding, but that in fact constitute the goal of the strenuous effort of reason. For to what cause should the unquench able desire to find a firm footing beyond all bounds of experience otherwise be ascribed? Pure reason has a presentiment of objects of great interest to it. It takes the path of mere speculation in order to come closer to these, but they flee before it. Presumably it may hope for better luck on the only path that still remains to it, namely that of its **practical** use. (*CPR*, A 795–6/B 823–4).

Kant adds that the "speculative interest of reason is very small" in regard to the three objects to which it is directed "in its transcendental use," namely "the freedom of the will, the immortality of the soul, and the existence of God," and could not by itself suffice to explain "the ex hausting labor of transcendental research, hampered with unceasing hin

11 For a discussion of the "Canon" that stresses its importance in the emerging ar chitectonic of Kant's philosophy as a whole, see Recki (1998).

drances," that has been devoted to these objects. This remark suggests that the regulative use of theoretical reason previously described in the Appendix to the "Dialectic" is either not very important, which might come as a surprise given that Kant has claimed it to be necessary in order to have a sufficient criterion of empirical truth, or else is not dependent upon these ideas of pure reason, which might be welcome news to us now but seems to be in tension with Kant's suggestion in the second part of the Appendix that these very ideas themselves have an indispensable regulative use.[12] But be all that as it may, Kant's remark here seems intended to serve as a further reason to suppose that the proper use of pure reason must be practical rather than theoretical: his teleological assumption is that a fundamental faculty of the human being must not only have a proper function, but an important one, so if the regulative theoretical use of the ideas of pure reason is not very important, that is all the more reason to suspect that they must have an important and indispensable function for practical reason.

Kant then describes the positive practical function of pure reason in two stages. First, he claims that pure reason must provide a canon of *a priori* moral laws. His argument here actually depends upon a constitu tive use of the teleological premise that the proper function of pure rea son must be to provide a canon of some *a priori* laws and that merely regulative principles would not suffice to discharge this function: the regulative principles of pure reason that have been shown in the Appen dix to organize empirical cognition of nature are now assumed to be an inadequate goal or *raison d'etre* for the faculty of pure reason as a whole, and Kant further adds that a merely regulative use of practical reason to organize the pursuit of ends given to us by mere inclination would also be inadequate to explain the existence of pure reason:

> If the conditions for the exercise of our free choice are empirical, then in that case reason can have none but a regulative use, and can only serve to produce the unity of empirical laws, as, e. g., in the doctrine of prudence the unification of all ends that are given to us by our inclinations into the single end of **happiness** and the harmony of the means for attaining

12 Grier (2001, 294–301), attempts to defend the supposition that the regulative use of the ideal of systematic unity is dependent upon the use of the ideas of pure reason, that is, the ideas of the objects of the soul, the world, and God, by the suggestion that these ideas are just the "projected unities" of complete knowledge. That may work for the cases of the soul and the world, but God clearly has to be introduced as the ground for the other two projected uni ties—which raises the question of whether such a ground is actually necessary.

> that end constitute the entire business of reason, which can therefore pro vide none but **pragmatic** laws of free conduct for reaching the ends rec ommended to us by the senses, and therefore can provide no pure laws that are completely determined *a priori*.

But, Kant assumes, reason must provide us some "pure laws that are completely determined *a priori*," and if these are not to be found in the theoretical domain, then reason must provide us with "pure practi cal" or moral laws:

> Pure practical laws, on the contrary, whose end is given by reason com pletely *a priori*, and which do not command under empirical conditions but absolutely, would be products of pure reason. Of this sort, however, are the **moral** laws; thus these alone belong to the practical use of reason and permit a canon. (*CPR*, A 800/B 828)

Here Kant derives the crucial conclusion that there must be a canon of pure moral laws directly from the teleological assumption that reason must have the function of providing some canon of pure laws and the premise that the regulative laws it provides in the theoretical sphere do not amount to a canon of pure laws. One decisive change in Kant's metaethics after the *Critique of Pure Reason*, as we will see, is that he will step back from making constitutive use of his teleological assumption to argue for the existence of pure moral laws, and will make only provisional or regulative use of the assumption.

For now, however, let us continue on to the second stage of Kant's canon of pure reason. Here Kant's claim is that once we are given the pure laws of morality, we must also be able to assume that what those laws command is possible, and in turn that the necessary conditions *of* the possibility of what they command are satisfied:

> I assume that there are really pure moral laws, which determine completely *a priori* (without regard to empirical factors, i. e., happiness) the action and omission, i. e., the use of the freedom of a rational being in general, and that these laws command **absolutely** (not merely hypothetically under the presupposition of other empirical ends), and are thus necessary in every respect [...]. Pure reason thus contains—not in its speculative use, to be sure, but yet in a certain practical use, namely the moral use—prin ciples of the **possibility of experience**, namely of those actions in con formity with moral precepts which **could** be encountered in the **history** of humankind. For since they command that these actions ought to hap pen, they must also be able to happen, and there must therefore be possible a special kind of systematic unity, namely the moral, whereas the systematic unity of nature **in accordance with speculative principles of reason** could not be proved [...]. Thus the principles of pure reason have objective reality in their practical use, that is, in the moral use. (*CPR*, A 807/B 835).

Kant's premise is that the *a priori* laws of pure practical reason command the realization of a "moral world" in which there is complete compli ance with those laws (*CPR*, A 808/B 836) but also "happiness in the world, insofar as it stands in exact relation with morality (as the worthi ness to be happy)," or "**the ideal of the highest good**" (*CPR*, A 810/ B 838). His argument is then that if this is what pure practical reason commands, it must be possible for it to be realized because what ought to be can be and in turn the conditions of its possibility must obtain. These conditions of possibility are what Kant will subsequently call the postulates of pure practical reason, although he does not actually use that term in the "Canon of Pure Reason," instead characterizing our attitude toward these conditions as "doctrinal belief" (*doktrinaler Glaube*) (*CPR*, A 826/B 854).

Kant's treatment of these beliefs in the "Canon" differs from his subsequent treatment of them, for example in the *Critique of Practical Reason*, in more than title alone. Most strikingly, he claims in the first *Critique* that morality requires only an *empirically confirmed conception of "practical freedom,"* that is, evidence of a "causality of reason in the deter mination of the will" "through experience, as one of the natural caus es," and that any question of whether there is "transcendental freedom," namely "an independence of [...] reason itself [...] from all determining causes of the senses" "does not belong to reason in its practical use, so in a canon of pure reason we are concerned with only two questions that pertain to the practical interest of pure reason [...] namely: Is there a God? Is there a future life?" (*CPR*, A 803/B 831). In the *Groundwork of the Metaphysics of Morals*, his next discussion of morality, Kant would notoriously suppose that he must be able to prove the existence of transcendental freedom because only thus could he prove the validity of the moral law itself, and even after he gave up on this proof as hope less[13] in the *Critique of Practical Reason*, Kant would still suppose that the validity of the moral law presupposes the existence of transcendental and not merely practical freedom. Why Kant was prepared to settle for prac tical freedom for the purposes of morality in the *Critique of Pure Reason* is not clear, but his drastic change on this issue must certainly have been one reason why he came to realize in 1786 87 that he could not pres

13 There is of course a huge literature on Kant's proof in *Groundwork* III. For two opposed interpretations, see Ameriks (2000, ch. 6), and Henrich (1998); for my own position, see Guyer (2007).

ent his by then current view on freedom of the will merely as part of his revisions to the first *Critique*, but would have to write a second.

The other complexity in Kant's treatment of the conditions of the possibility of the realization of the commands of morality in the "Canon of Pure Reason" is internal. This is the tension between his treatment of the doctrinal belief in the immortality of the human soul and the rest of his account. Having introduced, without explanation, the premise that morality commands not just worthiness to be happy, achieved through (whole hearted) compliance with the moral law (*CPR*, A 808/B 836), but also a "system of happiness proportionately combined with morality" (*CPR*, A 809/B 837), Kant then observes that the "sensible world […] does not offer such a connection to us," so we must assume the "moral world" in which compliance with the moral law is accompanied with happiness "to be a world that is future for us," that is, we must assume the immortality of the human soul.[14] This claim is not an outright contradiction of Kant's previous remark that that it must be possible that "actions in conformity with moral pre cepts […] **could** be encountered in the **history** of humankind" (*CPR*, A 807/B 835) even if that refers to the *natural* history of humankind, that is, the history of our species in the sensible world, it is still conceiv able that the happiness that is to accompany worthiness to be happy could occur only subsequently, in the non or post natural history of the species. Nor is it an outright contradiction of Kant's claim that we must believe in the existence of God as "the highest **original** good" which is the "ground of the practically necessary connection of both elements of the highest derived good," that is, both compliance with the commands of morality leading to worthiness to be happy and happiness proportionate to that worthiness in "an intelligible, i. e., **moral** world" (*CPR*, A 810/B 838), for that "moral world" can be sup posed to be completed only in the non natural, future life of the im mortal human souls. This is indeed what Kant seems to have in mind when he says immediately following these remarks that since "the senses do not present us with anything except a world of appearances" that does not satisfy the description of a moral world, "we must assume

14 Kant does not make this clear, but presumably he must mean the immortality of *all* human souls, since the command to be moral is not restricted in its applica tion to anything less than all human beings, and therefore the need to connect happiness with the fulfillment of the commands of morality is also not restrict ed.

the moral world to be a consequence of our conduct in the sensible world," and thus "God and a future life are the two presuppositions that are not to be separated from the obligation that pure reason imposes on us in accordance with principles of that very same reason" (*CPR*, A 811/B 839). A few pages later, however, Kant suggests that what mor ality commands us to do is to transform the sensible world *into* a moral world, that is, make it fully comply with the commands of morality; this suggests that the sensible world and the moral or intelligible world can not be conceived of as two different worlds, one of which may be the consequence of the other, but it must be possible to conceive of the in telligible world as an ideal that can be realized *in* the sensible world. On this account, God must in turn be conceived of not as the condition of the possibility of the connection of happiness in a future life with wor thiness to be happy in this life, but as the condition of the possibility of the connection of happiness in the natural life of the human species with worthiness to be happy in that same natural life (and immortality seems to drop out of the picture).[15] This passage stresses the desired identity of the moral world with the sensible world:

> But this systematic unity of ends in this world of intelligences, which, though as mere nature it can only be called the sensible world, as a system of freedom can be called an intelligible, i.e., moral world (*regnum gratiae*), also leads inexorably to the purposive unity of all things that constitute this great whole, in accordance with universal laws of nature, just as the first does in accordance with universal and necessary moral laws, and unifies practical with speculative reason. The world must be represented as having arisen out of an idea if it is to be in agreement with that use of reason with out which we would hold ourselves unworthy of reason, namely the moral use, which depends throughout on the idea of the highest good. All re search into nature is thereby directed toward the form of a system of ends, and becomes, in its fullest extension, physico theology. This, howev er, since it arises from moral order as a unity which is grounded in the es sence of freedom [...] brings the purposiveness of nature down to grounds that must be inseparably connected *a priori* to the inner possibility of things, and thereby leads to a **transcendental theology** that takes the ideal of the highest ontological perfection as a princple of systematic unity, which con nects all things in accordance with universal and necessary laws of nature, since they all have their origin in the absolute necessity of a single original being. (*CPR*, A 815–16/B 843–4).

15 For some exploration of the twists and turns in Kant's conception of the highest good, see Guyer (2000, ch. 10).

Regardless of the tensions leading up to it, this remarkable passage sums up but also points beyond the teleology of the first *Critique*. It begins by reiterating Kant's fundamental metaphilosophical assumption that every faculty of human nature must have an important positive purpose, thus that pure reason, even though it has been shown to lead to illusions in the theoretical domain unless its use is restricted to the merely regulative, must have a positive use in morality. The argument then shifts from the metaphilosophical to the substantive plane by means of the assumption that morality commands a goal that must be realized within nature, thus within the natural history of human kind, which leads to the thesis that nature itself must form a "system of ends" and that its "universal laws" must be purposive, that is, such that they can actually bring about or allow for the realization of the end commanded by morality. The claim here is not merely that the laws of nature must constitute a systematic unity from a logical point of view, as was suggested in the Appendix to the "Transcendental Dialectic," but that they must constitute a systematic unity from the moral point of view, that is, collectively make possible the realization of the object of morality. Finally, Kant supposes that such a purposive unity of the laws of nature can only have "arisen out of an idea" in a "single original being," that is, that the laws of nature must be purposive not just in the sense of being suitable for the realization of the goal of morality but also in the sense of having been intended to be so suitable on the part of an agent capable of both conceiving of such laws and bringing them into being. The assumption that reason itself must be purposive thus leads to Kant's culminating vision in the first *Critique* of a purposive system of nature grounded in a purposive original being, and the physico theology that Kant claimed could not be reached from theoretical grounds is thus reached from moral grounds. But although Kant does claim that "research into nature" is to be directed "toward a system of ends," he makes no attempt to connect his present moral argument for the purposiveness of nature to his previous theoretical argument for the regulative use of the idea of nature as a purposive system, nor does he give any clue how this directive is to be carried out.

Moreover, although Kant argues in the final section of the "Canon of Pure Reason" that the affirmation (*Fürwahrhalten*) of the existence of God to which this argument has led is a "doctrinal belief" rather than actual knowledge, an affirmation made on "subjectively" rather than "objectively" sufficient grounds, so that "I must not even say **'It is** morally certain that there is a God,' etc., but rather **'I am** morally certain'

etc." (*CPR*, A 829/B 857), he does not explicitly say that the use of this conception of the laws of nature as a morally purposive system and of the idea of God as a morally purposive agent must be strictly regulative; on the contrary, he has argued for it by premising that reason must have a more than merely regulative purpose. By restating his teleological vi sion within the framework of a theory of regulative judgment in the third *Critique*, Kant will revise this position and suggest that the use of teleological conceptions must always be regulative.

3. On the way to the third *Critique*

Before we turn to the third *Critique*, however, we may take a quick look at two transitional moments in the evolution of Kant's thought about teleology. The *Groundwork for the Metaphysics of Morals*, as is well known, appeals to a teleological argument very early in its argument. Immediately after his opening argument that the good will is the only thing that is unconditionally good, not any of the gifts of nature or for tune that might make it effective nor the ends that it may bring about if it is effective, Kant makes the explicitly teleological argument that hap piness cannot be the goal of our faculty of reason because reason is not as effective at producing happiness as instinct is. This argument is based on the premise that each natural faculty of the human being (like any other natural organism) has a function that it performs better than any other faculty does: "In the natural constitution of an organized being, that is, one constituted purposively for life, we assume as a principle that there will be found in it no instrument for some end other than what is also most appropriate to that end and best adapted to it" (*G*, 4:395).[16] If reason is not the best adapted of faculties for the production of happiness, then not only must some other faculty be better adapted for the production of happiness, but also reason must be purposive and better adapted for the production of some other end. Kant's claim is then that the production of the good will must be this end of the faculty of reason, so that, on the assumption that the faculty of rea son must be the source of the moral law, the command of the moral law must be to realize a good will rather than to maximize happiness:

16 Translation from Kant (1996, 50). The *Groundwork* will be abbreviated as "*G*." Further page citations to the translations will not be given for this or other works by Kant, since all Cambridge editions provide *Akademie* pagination.

> […] since reason is nevertheless given to us as a practical faculty, that is, as one that is to influence the **will**, then, where nature has everywhere else gone to work purposively in distributing its capacities, the true vocation of reason must be to produce a will that is good, not perhaps **as a means** to other purposes, but **good in itself**, for which reason was absolutely necessary. (*G*, 4:396).

Now, there are many things that can be criticized about this argument – it is not obviously true that instinct is better than reason at producing happiness, at least over a long term, nor is it immediately obvious, perhaps as a conceptual matter, that the production of a good will is the only alternative to the production of happiness as a function of reason – but perhaps the most questionable aspect of the argument is its assumption of the teleological premise that it uses without any sort of supporting argument at all. It might seem, that is, as if Kant is making constitutive use of the teleological principle in his metaethics here, just as he did in the "Canon of Pure Reason" in the first *Critique*. The point that I want to make here, however, is that the structure of the *Groundwork* as a whole implies a subtle change in the role of this teleological assumption in Kant's derivation of the fundamental principle of morality from its role in the "Canon." For while in the earlier work Kant's assumption that reason must have a positive purpose beyond that of producing the merely regulative principles of theoretical inquiry was the sole premise adduced for his confidence that *a priori* moral laws are given by pure reason, in the *Groundwork* Kant uses the teleological principle only in the opening section, labeled a "Transition from Common Rational to Philosophic Moral Cognition" (*G*, 4:393). In this section, Kant derives the first formulation of the categorical imperative (as the principle that "I ought never to act except in such a way that I could also will that my maxim should become a universal law"; *G*, 4:402) from what he takes to be common sense notions about the value of a good will and duty, the "good will though under certain subjective limitations and hindrances" (*G*, 4:397), and he presumably takes his premises that reason must have a function for which it is best suited and that the production of happiness is not it to be common sense notions as well. This first derivation of the categorical imperative from common sense notions, which is in any case supposed to be only analytical (*G*, 4:392), that is, to lead to a clear formulation of the fundamental principle of morality but not to a synthetic proof of its validity, is then supplemented if not entirely superseded by a second stage of analysis, the "Transition from Popular Moral Philosophy to Metaphysics of Morals" (*G*,

4:406), in which several formulations of the categorical imperative are derived from philosophical rather than common sense concepts, name ly, the concept of a rational agent as such (*G*, 4:412) and indeed the concept of a categorical imperative itself (*G*, 4:420 1), and then by the synthetic argument of the third "Transition from Metaphysics of Morals to the Critique of Pure Practical Reason" (*G*, 4:446), in which the unconditional validity of the categorical imperative for us human beings is derived from the identification of our intelligible or noumenal character with reason itself (*G*, 4:451 3). In other words, in the *Groundwork* the use of the teleological principle in Section I can be regarded as merely heuristic and provisional: it is a way for us to discover a first formulation of the moral law, but both the full content of the moral law and its binding validity must be and subsequently are established on independent philosophical grounds. In other words, in the *Groundwork* the teleological principle is used as a regulative principle for the conduct of moral inquiry rather than as a constitutive principle for conclusive moral argumentation. I call this departure from the met aphilosophical status of teleology in the first *Critique* subtle, because it is signaled only by the organization of the *Groundwork* and not explicitly asserted, but it is also fundamental. And I would suggest that the restate ment of all of Kant's teleology in the third *Critique* within the frame work of a theory of reflective rather than determinant judgment a framework only hinted at in the *Critique of Pure Reason*, as we saw shows that this change in the status of teleology from constitutive to regulative is a central feature of Kant's most mature thought.[17]

In the same year as the *Critique of Practical Reason* and two years prior to the *Critique of the Power of Judgment*, Kant published an essay "On the Use of Teleological Principles in Philosophy." This essay is less of an anticipation of the third *Critique* than its title might suggest, since it is primarily devoted to Kant's dispute with Georg Forster over the criteria for distinguishing human races.[18] But it does contain enough general discussion to signal another important departure from the teleology of the first *Critique*, namely the view that *all* teleology must ultimately

17 H. J. Paton just dismissed the teleological argument in *Groundwork* I as "subsid iary" without exploring the implications for its status of the very structure of the work; see Paton (1949, 44).

18 It is for this reason that in the *Cambridge Edition* the translation of this essay (here abbreviated *UTP*) was included with the other essays on race in Kant (2007), where it appears at pp. 192–221, rather than with the *Critique of the Power of Judgment* (*CPJ*) in Kant (2000).

be grounded in practical rather than theoretical reason. Kant's argument is that all teleology, that is, all judgment about purposiveness, depends upon concepts of ends or purposes, and that "**Ends** have a direct relationship to **reason**, be it foreign reason or our own" (*UTP*, 8:182). To ascribe ends or purposes to nature or to God as the author of nature therefore requires conceiving of nature or God as "foreign reason," that is, reason but not human reason. Kant then makes the point, two centuries before Donald Davidson made a similar argument, that "even in order to place them in foreign reason, we must presuppose our own reason as at least as an analogue to the latter, since those ends cannot be represented at all without such an analogy." In other words, the only way for us to conceive of any reason other than our own is by analogy with our own. Kant then argues that if we want to conceive of an ultimate end for nature, we can only conceive of it in analogy with the only thing that our own reason presents as an ultimate end for ourselves, namely, the realization of our autonomy, or the preservation and promotion of our freedom in accordance with the moral law. Thus, the only possible teleological conception of nature will be the conception of nature as an arena (purposively intended) for the realization of human morality. Here is Kant's argument:

> Now ends are either ends of **nature** or ends of **freedom.** No human being can know *a priori* that there must be ends in nature; however, he can very well know *a priori* that there must be a connection of causes and effects in nature. Hence the use of the teleological principle with respect to nature is always empirically conditioned. Things would be the same with the ends of freedom, if the objects of volition had to be given to the latter antecedently by nature […]. Yet the *Critique of Practical Reason* shows that there are pure practical principles, through which reason is determined *a priori* and which thus indicate *a priori* the latter's end. Now the use of the teleological principle in explanations of nature, given that it is restricted to empirical conditions, can never indicate the ultimate ground of the purposive connection completely and with sufficient determination for all ends. But the latter has to be expected from a **doctrine of pure ends** (which can be no other doctrine than that of **freedom**), the principle of which contains *a priori* the relation of reason in general to the whole of all ends and can only be practical. However, since a pure practical teleology, i.e., a morals, is destined to realize its ends in the world, it may not neglect their **possibility** in the world, both as regards the **final** causes given in it and the suitability of the **supreme cause of the world** to a whole of all ends as effect—hence natural **teleology** as well as the possibility of a nature in general, i.e., transcendental philosophy. (*UTP*, 8:182–3)

Here Kant argues that the only thing that we can conceive as an ultimate end at all is the pure end of morality, namely, our own freedom; that from the point of view of morality we must be able to conceive of this as a cause that is possible, that is, that can be realized, in the natural world; but also that even if we start off seeking for a purely natural tele ology in order to make sense of the connections of cause and effect in the natural world, we will be forced to seek a necessary rather than merely contingent end, and here again the only candidate is the neces sary end we find in our own use of reason, namely, the moral end of the realization of freedom. So whether we start off by thinking about nature or about morality, if we think teleologically we must end up thinking of nature as purposive for the realization of human freedom.

This is the most general claim of the *Critique of the Power of Judgment* as well. What the third *Critique* makes more explicit through its charac ter as a theory of reflective judgment is what was already implicit in the structure of the *Groundwork*, namely that this practical teleology must be understood regulatively rather than constitutively. We will now attempt to make sense of that.

4. The Teleology of the *Critique of the Power of Judgment*

The argument of the third *Critique* is that not only does morality require us to be able to think of nature as an arena in which the goals of mor ality — the primary goal of the realization of our own freedom, and the secondary goal of the realization of happiness through the former — can be achieved, but that even our experience of nature itself — our experi ence of nature as a domain of lawfulness, our experience of nature as containing organisms, even our experience of nature as containing beauty, in spite of the fact that our experience of beauty can in the first instance be characterized as an experience of purposiveness without purpose — leads us to conceive of nature as suitable for the realization of our moral goal; but that this conception of nature to which both mor ality itself and our experience of nature lead us is reflective rather than determinant, leading us to seek the laws of nature through which this goal can be achieved rather than directly giving us these laws, or regu lative. The third *Critique* thus amplifies the claim of the 1788 essay "On the Use of Teleological Principles" that all teleology rests upon our conception of our own final end by showing how that is true in every case in which we think of purposiveness in nature. It also develops

the *Groundwork*'s organizational implication that the use of a teleological principle in morality is a preparatory stage in moral philosophy into the view that the use of teleological principles is always regulative, even in morality.

The teleological focus of the third *Critique* as a whole, not just its second half, the explicitly designated "Critique of the Teleological Power of Judgment," is stated in the two well known "chasm" passages in the published version of the Introduction.[19] The first of these states that although there is an "incalculable chasm [...] between the domain of the concept of nature, as the sensible, and the domain of the concept of freedom, as the supersensible," so that the first "can have no influ ence on the second,"

> yet the latter **should** have an influence on the former, namely the concept of freedom should make the end imposed by its laws real in the sensible world; and nature must consequently also be able to be conceived in such a way that the lawfulness of its form is at least in agreement with the possibility of the ends that are to be realized in it in accordance with the laws of freedom. (*CPJ*, Introduction, section II, 5:175–6).

The second passage reiterates and expands:

> The understanding legislates *a priori* for nature, as object of the senses, for a theoretical cognition of it in a possible experience. Reason legislates *a priori* for freedom and its own causality, as the supersensible in the subject, for an unconditioned practical cognition. The domain of the concept of nature under the one legislation and that of the concept of freedom under the other are entirely barred from any mutual influence that they could have on each other by themselves [...] by the great chasm that separates the su persensible from the appearances [...]. But although the determining grounds of causality in accordance with the concept of freedom (and the practical rules that it contains) are not found in nature, and the sensible can not determine the supersensible, nevertheless the converse is possible (not in regard to the cognition of nature, of course, but in regard to the conse quences of the former on the latter) and is already contained in the concept of a causality through freedom, whose **effect** in accordance with its formal laws is to take place in the world [...].—The effect in accordance with the concept of freedom is the final end, which (or its appearance in the sensible world) should exist, for which the condition of its possibility (in the nature

19 The subtitle of Gibbons (1994)—"Bridging Gaps in Judgement and Experi ence"—suggests that it will address the project of bridging the gulf as the organ izing theme of the third *Critique*, but as her main title—"Kant's Theory of Imagination"—suggests, her book does not focus on this issue after all, but on the role of the imagination in in Kant's treatments of the schematism, the sublime, and the highest good.

> of the subject as a sensible being, that is, as a human being) is presupposed. That which presupposes this *a priori* and without regard to the practical, namely the power of judgment, provides the mediating concept between the concepts of nature and the concept of freedom [...] in the concept of a **purposiveness** of nature, for thereby is the possibility of the final end, which can become actual only in nature and in accord with its laws, cognized. (*CPJ*, Introduction, section IX, 5:195–6).

These passages start off with a claim with which we should already be familiar from the *Critique of Practical Reason*, namely that morality does not just command a free choice that is to take place in the "supersensible" or noumenal realm, but an end or objective that is to be realized in nature or the phenomenal realm, namely, as Kant will also make explicit later in the third *Critique*, the highest good. But the second passage in particular suggests the chief innovation of the new *Critique*, namely that the power of judgment *itself* introduces the concept of a purposiveness of and final end for nature "without regard to the practical" (*ohne Rücksicht auf das Praktische*). This cannot mean that the faculty of judgment introduces the concept of a *different* final end for nature than that which practical reason itself legislates, namely the realization of autonomy and the highest good, for as Kant has already argued in the essay on teleological principles and will emphasize again in the culminating sections of the third *Critique*, there is only one end that we can conceive of as a final end for anything, thus for nature, namely the end of the realization of human freedom and through that the highest good. So it can only mean that the faculty of judgment provides independent grounds for our conception of nature as having a final end but that this final end can then be conceived only in the terms that practical reason offers. In other words, whereas Kant had previously argued from the imperative of morality itself combined with the principle that ought implies can that the highest good must be realizable in nature, he will now argue, without explicit use of the ought implies can principle, that the judgment of various aspects of nature itself also leads to the conception of nature as an arena suitable for the realization of the final end of human freedom and its own further object, the highest good.

This new argument that theoretical inquiry as well as morality leads to a conception of the moral purposiveness of nature and through that ultimately to a moral theology is the chief substantive innovation of the third *Critique*.[20] The chief methodological innovation of the work is the

20 See Guyer (2005a, ch. 12, 314–342).

insistence that the thought of the purposiveness of nature, reached either directly from morality or indirectly from aspects of our experience of nature itself, must be regulative, which is expressed by the framing of the book's central argument within a theory of reflective judgment. The distinction between determinant and reflective judgment, which was anticipated but not yet present in the first *Critique*, is the distinction between the case in which "the universal (the rule, the principle, the law) is given" and the power of judgment need only subsume a particular under it, and the case in which "only the particular is given, for which the universal is to be found" (*CPJ*, Introduction, section IV, 5:179), in other words, in which a law must be found. Reflective judgment is our capacity for seeking laws, and any principle for reflective judgment can thus be only a principle authorizing us to seek laws of one type or another:

> the **power of judgment** [...] should contain in itself *a priori*, if not exactly its own legislation, then a proper principle of its own for seeking laws, although a merely subjective one; which, even though it can claim no field of objects as its domain, can nevertheless have some territory and a certain constitution of it, for which precisely this principle only might be valid. (*CPJ*, Introduction, section III, 5:177).

What Kant seems to mean by this remark is, first, that reflective judgment does not dispose of any concepts that by themselves constitute knowledge of objects other than the immediate objects of theoretical and practical inquiry, that is, objects in nature and human actions that originate in noumenal choice but play out in nature — thus reflective judgment cannot provide knowledge of God or the free and immortal noumenal self, and restating the theory of the postulates one more time as part of the theory of reflective judgment, as Kant does in the culminating "Doctrine of Method" of the "Critique of the Teleological Power of Judgment," is thus a way of emphasizing that his moral theology and theory of free will are not traditional metaphysics. And, second, Kant's statement means that the principle or principles of reflective judgment direct our search for particular laws for natural science and morality, not for wholly new *types* of laws to apply to the objects of natural science or morality. Principles of reflective judgment are thus regulative in the two senses that they regulate searches for laws for objects and actions in nature and that if they refer to any objects beyond these two domains they do so only in a subjectively rather than objectively valid way.

Kant might seem to bely these blanket restrictions when he says that "The power of judgment's concept of a purposiveness of nature still be longs among the concepts of nature, but only as a regulative principle of the faculty of cognition, although the aesthetic judgment on certain ob jects (of nature or art) that occasions it is a constitutive principle with regard to the feeling of pleasure or displeasure" (*CPJ*, Introduction, sec tion IX, 5:197). But however the last clause is to be fully explicated, it does not bely what has just been said, because it is a central contention of Kant's theory of aesthetic judgment that there are no laws of taste or criticism that link universally valid feelings of pleasure in beautiful or sublime objects to *determinate* properties of objects, and thus no *laws* of taste (*CPJ*, §35, 5:284).[21] The *a priori* principle for the reflective judg ment of taste is supposed to allow us to "constitute" the universal val idity of our pleasurable *response* to beautiful or sublime objects without yielding any new laws directly about objects the "constitutive" *a priori* principle of judgments of taste is thus only that our faculties for aesthetic response must be intersubjectively uniform because they are the same as our faculties for cognition in general, even though aesthetic response is not a form of cognition (*CPJ*, §38, 5:290).[22] Thus even in the case of taste reflective judgment does not introduce a new type of laws *about objects* beyond the laws of natural science and morality.

But this is not the place for a detailed discussion of Kant's aesthetics. Indeed, it is not the place for a detailed discussion of any of the argu ments of the third *Critique*, all of which I have in any case discussed at length before.[23] Here I want only to give a brief account of how each of the main topics of the work fits into its overarching teleological argument.

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21 Here of course Kant is following in well defined footsteps in eighteenth cen tury aesthetics: not only had Hume in "Of the Standard of Taste" (1757) and Kames in *Elements of Criticism* (1762) argued that we can identify sources but not rules for aesthetic pleasure (that is why Kames called his work "Ele ments of Criticism" and not "*The* Elements of Criticism"), but also a "ration alist" such as Baumgarten, although often accused of looking for rules for aes thetic judgment, had in fact only identified sources of aesthetic pleasure such as aesthetic magnitude, truth, light, and life, but never attempted to formulate al gorithmic rules (see his *Aesthetica*, 1750–58). Through his theory of the free, non conceptually determined play of the cognitive faculties, Kant is only incor porating this widespread view into his own philosophical system.

22 For my critique of the actual success of this argument, see Guyer (1997, chs. 7–9); for a defense of it, see Allison (2001, ch. 8).

23 See Guyer (1993), Guyer (1997), Guyer (2005a), and Guyer (2005b).

There are six main forms of reflective judgment discussed in the third *Critique:* reflective judgment on the systematicity of the laws of nature; aesthetic judgment on beauty in nature and decorative art (art without rational content), on the sublime, and on fine art (art with ra tional content); reflective judgment of organisms; and reflective judg ment on nature itself as a system, that is, nature as a purposive system of objects in contrast to the *laws* of nature as a system.[24] I will touch here on the cases of the systematic unity of the laws of nature, beauty, organisms, and nature as itself a system. Kant's claim about particular laws of nature in the Introduction to the third *Critique* is that these laws, although they are not derivable directly from the "universal tran scendental laws of nature," that is, the completely general "Principles of Pure Understanding" that are themselves derived from the schematism of the pure concepts or categories of the understanding in the first *Critique*, must nevertheless, "if they are to be called laws (as is also required by the concept of a nature), be regarded as necessary on a principle of the unity of the manifold, even if that principle is unknown to us" (*CPJ*, Introduction, section IV, 5:180; cf. section V, 5:184). This claim may be regarded as a fundamental clarification of Kant's vague suggestion in the Appendix to the Transcendental Dialectic that the sys tematic unity of reason is a criterion for empirical truth: here Kant's claim is that the principle of the unity of the manifold has the specific function of grounding the *necessity* of empirical laws that have to be con ceivable as necessarily true even though they cannot be inferred directly from the general principles of pure understanding. His suggestion is then that the only way for us to conceive of these laws as necessary is by con ceiving of them as part of a system of laws in which they have a deter minate position, by which the content of any particular law would be made necessary by its relation to the others that are systematically related to it.[25] His further claim is then that such a system of laws must be con ceived of as the product of an intelligence, just as the general laws of na ture are the actual products of our own intelligence, but obviously as the product of an intelligence other than our own, since we do not at any time know the whole system of particular laws of nature, and greater than our own, since it does not seem to be possible that there be any time at which we finite creatures could know the whole system.

24 See Guyer (2003).

25 I have developed this point more fully in Guyer (2005a, ch. 3).

Thus, the principle for reflective judgment "can be nothing other than this":

> That since universal laws of nature have their ground in our understanding, which prescribes them to nature (although only in accordance with the universal concept of it as nature), the particular empirical laws, in regard to that in them which is left undetermined by the former, must be consid ered in terms of the sort of unity they would have if an understanding (even if not ours) had likewise given them for the sake of our faculty of cognition, in order to make possible a system of experience in accordance with par ticular laws of nature. (*CPJ*, 5:180).

But then, as Kant had maintained in the "Use of Teleological Princi ples," we can only conceive of an intelligence in analogy with our own, and since our own conception of a design of any kind is always driven by a conception of a purpose that it is to serve, we must also con ceive of the design of the system of the laws of nature as driven by an end or purpose on the part of its designer:

> Now since the concept of an object insofar as it at the same time contains the ground of the reality of this object is called an **end**, and the correspond ence of a thing with that constitution of things that is possible only in ac cordance with ends is called the **purposiveness** of its form, thus the prin ciple of the power of judgment in regard to the forms of things in nature under empirical laws in general is the **purposiveness of nature** in its mul tiplicity. I.e., nature is represented through this concept as if an understand ing contained the ground of the unity of the manifold of its empirical laws. (5:180)

Three comments about this argument are necessary. First, Kant claims, in accordance with his general conception of a principle of reflective judgment, that our conception of the purposiveness of laws of nature canot *prescribe* anything, including a relation to ends, to "products of na ture", "but can only use this concept in order to reflect on the connec tion of appearances in nature that are given in accordance with empirical laws" (5:181). In other words, this conception can only be used to guide our search for particular laws of nature and the ultimate purpose they may serve. At the same time, however, Kant also insists that "the prin ciple of the purposiveness of nature (in the multiplicity of its empirical laws) is a transcendental principle," that is, "one through which the uni versal *a priori* condition under which alone things can become objects of our cognition at all is represented" (*CPJ*, Introduction, section V, 5:181). We saw that he also insisted in the first *Critique* that the principle of systematicity is transcendental and not merely logical, that is, in some sense about objects (in this case, laws) and not merely about our own

representation of them, and his claim in the third *Critique* that the sys tematicity of the particular laws of nature must be posited in order to ground their necessity makes sense of this claim: since we presumably claim to know the necessity of particular laws of nature before knowing the entire system of them — which indeed we never do know in its en tirety — we must be assuming that this system *exists* even when we do not know it in its entirety, in other words that it exists not just within our thought — which is incomplete — but beyond it. Finally, Kant states that the concept of the purposiveness of the laws of nature is "distinct from that of practical purposiveness (of human art as well as of morals), although it is certainly conceived of in terms of an analogy with that" (*CPJ*, Introduction, section IV, 5:181). But later he will argue that we conceive of a unique purpose or end for any system only by con ceiving of an end of unconditional value, and that the only candidate for such an end is the realization of human morality, so in fact the end of any purposive system must not merely be analogous with the end of morality, it must be identical with it. There is no reason why this argument that Kant ultimately makes about the system of the *objects* of nature as a whole should not also apply to the system of the *laws* of nature. The proper conclusion of Kant's analysis of the possibility of our representation of the necessity of particular laws of nature should thus be that in order to represent any particular law as necessary we must rep resent it as part of a system, that we must conceive of this system as if it existed beyond our present thought about it, and finally that in order to represent the system itself we must represent its ultimate end as identical with the end of morality; thus individual laws must also be understood as purposive with regard to this ultimate end, and not as purposive only in the sense of seeming to have been designed as part of a system of laws that facilitates a theoretical purpose of our own.

Kant's account of the reflective judgment of beauty ultimately has a similar two- staged structure, in which beauty is first analyzed in terms of purposiveness without purpose, or solely in terms of satisfying an inter nal, intellectual purpose of our own, but is then incorporated into a larg er account in which it is linked to our final end, the purpose of our moral development. In the first instance, of course, Kant insists that our pleasure in beauty is a response to "the merely subjective formal purposiveness" of the object that is "nothing but its suitability to the cognitive faculties that are in play in the reflecting power of the object, insofar as they are in play," and not to any actually intended purpose for the object (*CPJ*, Introduction, section VII, 5:189– 90) — in other words,

purposiveness without a purpose. An aesthetic judgment is thus not a judgment that an object has been created with a certain purpose in mind, only a judgment that it has a certain kind of effect on our cognitive powers and is in that sense purposive *for* them — and even in the case in which an object of taste clearly *was* produced with an intention in mind, namely a work of fine art, its pleasurable effect on our cognitive powers must seem to take place *in spite of* that history (*CPJ*, §45, 5:306), or better to *go beyond* what can be ascribed to that intention, and thus to be a product of genius rather than mere intention (*CPJ*, §46, 5:307).[26] However, Kant also claims that in spite of the fact that a judgment of beauty is not properly a judgment that the existence of the beautiful object is the product of a determinate intention to produce it, we nevertheless take the fact *of the existence* of beautiful objects in nature as a "trace" or "sign" that nature "contains in itself some sort of ground for assuming a lawful correspondence of its products with our satisfaction," and indeed "reason must take an interest in every manifestation in nature of a correspondence similar to this; consequently the mind cannot reflect on the beauty of **nature** without finding itself at the same time to be interested in it" (*CPJ*, §42, 5:300).[27] We have a moral interest in nature's lawful correspondence with our satisfaction — because the object of morality must be realizable in nature — and we take an interested pleasure in the existence of beauty, even if our pleasure in beauty is initially disinterested, because it is evidence of this morally important compliance between nature and our own objectives.

Kant thus argues here that we take beauty as evidence of nature's purposiveness for the realization of our moral objectives, that is, its suitability for this realization. He does not argue in this discussion of our "intellectual interest" in beauty that we inevitably conceive of nature as *designed* for the realization of our moral purposes. But in the "Critique of the Teleological Power of Judgment" he makes a larger argument to

26 For development of this point, see Guyer (2005b, ch. 3).

27 And since Kant argues a few sections later that since the existence of fine art is due to genius, and genius is a gift of nature, the beauty of fine art is as much a natural phenomenon as the beauty of any non-human product, and we have as much reason to take an interest in it on moral grounds as we do in any non-human beauty. Indeed, one might argue, since we should primarily be interested in the amenability of *human* nature to the demands of morality, we should take special interest in the existence of humanly produced beauty as evidence of nature's amenability to morality. See Guyer (1993, ch. 7, 229–74).

that effect, and will sweep the existence of natural beauty up into that argument. So let us now turn to that argument.

The "Critique of the Teleological Power of Judgment" begins with the observation that we have no *prima facie* reason to attribute "external" or "relative purposiveness" to things in nature, that is, to assume that they were designed to be of any use to anything other than themselves, particularly to ourselves: extensive sandy tracts might have produced ex tensive pine forests that are or once were of great use to us, but we can apparently explain the products of these sandy tracts by purely mechan ical processes of ancient beach formation that do not have any obvious relation to human or any other purposes (*CPJ*, §63, 5:368). However, certain objects in nature inexorably lead us to conceive of them as "in ternally purposive": in contemplating such organic processes as repro duction, growth, and self maintenance (*CPJ*, §64, 5:370 1), we have to think of the parts of the organism as effects as well as of causes of its whole (*CPJ*, §65, 5:373). Now in the first instance, this experience or reflective judgment of organisms first provides "objective reality for the concept of an **end** that is not a practical end but an end of **nature**, and thereby provide[s] natural science for the basis of a teleology" that would otherwise be "unjustified" (5:476). But in fact this is the reso lution of Kant's "antinomy" of teleological judgment we have no way to conceive of natural ends, more specifically the respect in which their parts are effects of their whole rather than *vice versa* except by regard ing organisms as the product of an *antecedent design*, and we have no way to conceive of *that* except by conceiving of the design as the product of a *designer*. Now this thought will drive us in two directions: on the one hand, as Kant had held at the outset of his career, we have to conceive of such a designer as achieving its purpose *through* the laws of nature, even if in the case of organisms, as Kant thinks, we have no hope of ever discovering all the relevant laws (see especially *CPJ*, §75, 5:400); on the other hand, we have no way to conceive of the purpose of such a designer except through our conception of *our own* final end the realization of our freedom in accordance with the moral law and the realization of the highest good in nature in accordance with that moral law. The reflective judgment of organisms, in other words, drives us to a conception of the moral purposiveness of nature after all al though now, of course, unlike in the 1750s and 1760s, this is all argued within the framework of a theory of reflective judgment.

Before reaching this last step of his argument, however, Kant takes a step that connects it with his earlier discussions of systematicity and

beauty. He asserts that the concept of "matter" as a "natural end," that is, of organisms as some things in nature that are internally purposive, "necessarily leads to the idea of the whole of nature as a system in ac cordance with the rule of ends, to which idea all of the mechanism of nature in accordance with principles of reason must now be suboro dinated (at least in order to test natural appearance by this idea)" (*CPJ*, §67, 5:378 9), and also that once we have conceived of organisms as natural ends then "Even beauty in nature, i.e., its agreement with the free play of our cognitive faculties in the apprehension and judging of its appearance, can be considered in this way as an objective purposive ness of nature in its entirety, as a system of which the human being is a member" (*CPJ*, 5:380). His assumption must be that insofar as we con ceive of a purposive designer for anything in nature at all, we must con ceive of it as unitary, so we must conceive of it as a purposive designer for all of nature: for its non organic as well as its organic parts, for its beautiful parts as well as for its non beautiful parts, and for its system of laws as well as for the interrelation of all of its parts or objects. We therefore inevitably seek for the purpose of all of these things: organ isms, the whole of nature as an ecological system with non organic as well as organic parts, beauty, and the system of the laws of nature.

Once again, three comments are necessary here. First, Kant repeat edly emphasizes that the conception of nature as purposive in these var ious regards or at these various levels is strictly regulative in the sense that it is to drive our search for particular laws, indeed for mechanical laws even for organisms, although again we are also supposed to know that we will never be completely successful in the search for me chanical explanations of organic behavior (any more than we could suc ceed in finding mechanical laws for the explanation of the existence of natural or artistic beauty, which we can only attribute to the natural "gift" of genius):

> It is self evident that this is not a principle for the determining but only for the reflecting power of judgment, that it is regulative and not constitutive, and that by its means we acquire only a guideline for considering things in nature, in relation to a determining ground that is already given, in accord ance with a new, lawful order, and for extending natural science in accord ance with another principle, namely that of final causes, yet without harm to the mechanism of nature. (*CPJ*, §67, 5:379).

Or as Kant puts it in the next section, "the principle for the reflecting, not of the determining power of judgment [...] is [...] not meant to in troduce any special ground for causality, but is only meant to add to the

use of reason another kind of research besides that in accordance with mechanical laws, in order to supplement the inadequacy of the latter even in the empirical search for all the particular laws of nature" (*CPJ*, §68, 5:383). The two halves of this sentence may be hard to put together, but by saying that in teleology we do not add a new "ground for causality" into natural science Kant seems to mean that by introducing the concept of the purpose of the system of nature to our inquiry we do not in the end provide an alternative to the mechan ical explanation of nature, even in the case of organisms, but rather pro vide a goal *for* mechanical explanation, that of seeing how the final pur pose of nature is achieved *through* mechanical means even though we also know that our mechanical explanations of nature, *a fortiori* our me chanical explanation of nature's accomplishment of its purposes, will al ways be incomplete.[28]

Second, Kant once again reminds us that his teleology is regulative rather than constitutive in the further sense that it does not lead to an assertion of the existence of either a purpose in or a purposive designer of nature that is intended to be assertible on theoretically adequate grounds, but to a conception of nature that is meant to be practically beneficial:

> In teleology, insofar as it is connected to physics,[29] we speak quite rightly of the wisdom, the economy, the forethought, and the beneficence of nature, without thereby making it [nature] into an intelligent being (since that would be absurd); but also without daring to set over it, as its architect, an other, intelligent being, because this would be presumptuous; rather, such talk is only meant to designate a kind of causality in nature, in accordance with an analogy with our own causality in the technical use of reason, in order to keep before us the rule in accordance with which research into certain products of nature. (*CPJ*, §68, 5:383).

However, and this is my third point, Kant's eventual conclusion is that we cannot think of our *own* purposiveness in purely technical terms, but must always think of a final and moral end for our own technical cau sality, that is, our use of instrumental reason, and thus insofar as we must think of the causality of nature in analogy with our own causality, we will have to think of it as having a final end, as being moral as well as technical. Our own reason is unified under the aegis of practical rea

28 See also McLaughlin (1990, 177–9).

29 *Physik*, but this means natural science as a whole, not physics as contrasted to chemistry, biology, etc., as we now classify these sciences.

son this is of course a central conclusion of the *Critique of Practical Reason* and thus our teleological conception of nature must also ultimately be unified in analogy with the ultimately practical character of our own reason.

This is what Kant makes clear in the culminating argument of the "Critique of the Teleological Power of Judgment." This argument is developed in its "Doctrine of Method" because it concerns the ultimate *application* of the concept of purposiveness in nature. The "Analytic" of teleological judgment has explained how our experience of organisms inescapably introduces the concept of a natural end into our repertoire and then asserted that we inevitably extend this concept from our judg ment of organisms to our judgment of nature as a whole, as both a single ecological system and as a domain for beauty. The "Dialectic" of teleo logical judgment has argued that we must reconcile the conflict between the demand for mechanical explanation within natural science and the demand for a teleological conception of nature by conceiving of a su persensible, intelligent and purposive ground of nature that achieves its end through the mechanical laws of nature, although of course the conception of this ground is only regulative. The "Doctrine of Meth od" tells us what we can and must do with the idea of an end for nature. That we inevitably conceive of nature as if it were in all its aspects a pur posive system designed by an intelligence means that we cannot remain content with our initial impression (*CPJ*, §63) that all relations of "rel ative" or "external purposiveness" in nature are arbitrary, for example that human beings could just as well exist as means for the care of var ious herbivores as that the herbivores exist for the nourishment of human beings (*CPJ*, §82). But if we are to conceive of an ultimate end for nature, then, as "On the Use of Teleological Principles" had al ready argued, we can only do so from our own standpoint, by means of our own practical reason. But our own practical reasoning can be div ided into two kinds, that in which we conceive of things as means to our own only conditionally valid ends, that is, since our conception of happiness is nothing but the conception of the satisfaction of our sum of contingent and conditionally valid ends, that in which we con ceive of things as means to our own happiness, or that in which we sub ordinate the contingent and conditional ends of happiness to the neces sarily and unconditionally valid end of morality. But to take the former path and make a non moral conception of human happiness the end of nature would not give the system of nature a *determinate* end, since as Kant had earlier argued about such a natural conception of happiness,

it is not a single end at all, but just a misleadingly singular name for all the contingent, frequently intra and interpersonally conflicting particular ends of particular human beings (*Practical Reason*, 5:25 8), and in any case there is no evidence that nature is especially conducive to human happiness (CPJ, §83, 5:430). Instead,

> to discover where in the human being we are at least to posit that ultimate end in nature, we must seek out that which nature is capable of doing in order to prepare him for what he must himself do in order to be a final end, and separate this from all those ends the possibility of which depends upon conditions which can be expected only from nature. (CPJ, 5:431).

This leads to Kant's twofold conclusion that, first, the only thing that we can conceive of as a final end at all is ourselves, but only in our moral capacity and potential, that is, in our freedom

> Now we have in the world only a single sort of beings whose causality is teleological, i.e., aimed at ends and yet at the same time so constituted that the law in accordance with which they have to determine ends is represented by themselves as unconditioned and independent of natural conditions but yet as necessary in itself. The being of this sort is the human being, though considered as noumenon: the only natural being in which we can nevertheless cognize, on the basis of its own constitution, a supersensible faculty (**freedom**) and even the law of the causality together with the object that it can set for itself as the highest end (the highest good in the world). (*CPJ*, §84, 5:435) –

but, second, precisely since the final end of nature must be in the first instance our own freedom, and this is something that by definition nature itself cannot actually produce, what we must conceive of as nature's possible contribution to our own final end and thus as the ultimate end of nature itself is *discipline* (*CPJ*, §83, 5:432), something that can be produced by natural means but that can be freely employed by the human being in whom it has been developed to promote the moral end of human freedom and then the pursuit of the highest good in nature which is the object of human freedom.

Kant reiterates this argument, although without the clarification that only discipline and not full blown freedom can be an actual product of nature, in §86. As the culminating statement of Kant's teleology, this is worth quoting at length. Kant begins with the premise that if the human being makes "the feeling of pleasure," "well being," "enjoyment," or "happiness" his final aim, this "does not yield any concept of why he should exist at all." Rather,

> [h]e must already be presupposed to be the final end of creation in order for there to be a rational ground why nature, if its considered as an absolute whole in accordance with principles of ends, must agree with his happi ness.—Hence it is only the faculty of desire, although not that which makes him dependent on nature (through sensible impulses), not that in re gard to which the value of his existence rests on what he receives and en joys; rather it is the value that he alone can give to himself, and which con sists in what he does, in how and in accordance with which principles he acts, not as a link in nature but in the **freedom** of his faculty of desire, i. e., a good will is that alone by means of which his existence can have an ab solute value and in relation to which the existence of the world can have a **final end.** (*CPJ*, §86, 5:443).

It is striking that here Kant first characterizes the primary moral end of the human being, which is in turn the only possible final end for nature, in his most fundamental way, namely as freedom itself, and only after wards in the more common sense way with which he had begun the *Groundwork*, namely as good will.[30] But the claim that his philosophy conforms to common sense is always important to Kant, so he immedi ately adds that "the commonest judgment of healthy human reason is in complete agreement with this, namely that is only as a moral being that the human being can be a final end of creation." He then argues that if we must conceive of nature as a system that is purposive for the realiza tion of human morality, then we can only conceive of the author of na ture as intending to create the conditions for the realization of our own moral objectives as well:

> Now if we encounter purposive arrangements in the world, and, as reason inexorably demands, subordinate the ends that are only conditional to an unconditioned, supreme end, i. e., a final end, then […] what is at issue is not an end of nature (within it) […] but the end of its existence, with all its arrangements, hence the ultimate **end of creation**, and […] further […] the supreme condition under which alone a final end […] can obtain.
>
> Now since we recognize the human being as the end of creation only as a moral being, we have in the first place a ground, at least the first con dition, for regarding the world as a whole interconnected in accordance with ends and as a **system** of final causes, but above all, a ground for a **principle** for conceiving, for the relation of natural ends to an intelligent world cause that is necessary given the constitution of our reason, of the nature and the properties of this first cause as the supreme ground in the realm of ends, and so for determining the concept of it […]. On the basis of the principle of the causality of the original being thus determined

30 For my arguments that it is freedom itself that is the moral goal, see Guyer (2000, ch. 4).

> we must not conceive of it merely as an intelligence and as legislative for nature, but also as a legislative sovereign in a moral realm of ends. (*CPJ*, §86, 5:443–4).

Kant then continues that if we are to determine the concept of an intelligent cause of nature by assigning to it the properties necessary for it to make nature a system of which the achievement of human morality and its own object, the highest good, is the final end, then we must determine this concept by the properties of omniscience, omnipotence, omnibenevolence and justice, and only whatever other "remaining transcendental properties," such as eternity, omnipresence, etc., are in turn needed in order to support these moral properties. This method of determining the concept of God is a move, indeed the culminating move, that Kant had made in each of the prior two critiques (*Pure Reason*, A 814 15/B 842 3; *Practical Reason*, 5:139). The two key refinements that Kant has made to this move in the third *Critique*, however, are, first, the argument that we are lead to this conception of God by starting off from an inescapable feature of our experience of nature our experience of organisms as well as by starting directly from the demands of morality, and, second, the clear emphasis that this conception of God gives us only a regulative principle *for* our investigation of nature:

> But the principle of the relation of the world to a supreme cause, as a deity, on account of the moral vocation of certain beings, does not do this merely by supplementing the physical teleological basis for proof, and necessarily making this its ground; rather, it is adequate for that **by itself**, and urges attention to the ends of nature and research into the inconceivably great art that lies hidden behinds its forms in order to provide incidental confirmation for the ideas created by pure practical reason. (*CPJ*, §86, 5:444–5)

This is a difficult passage to interpret. On its face, it seems to claim only that our confidence in the moral purposiveness of nature should give us confidence for our continued scientific investigation of the mechanisms of nature, and that the "confirmation from natural ends" for the realizability of the ends "created by pure practical reason" that we will obtain from progress in our scientific research is only "incidental" perhaps like the confirmation of nature's amenability to our moral goals that we receive from the existence of natural beauty, psychologically supportive of the pursuit of our moral goals but not strictly necessary to that. However, in light of Kant's larger argument in the preceding sections, it would seem that Kant's argument that we can conceive of nature as a system only if we conceive of it as conducive to our own morality

and that we can conceive of an intelligent ground of nature only by conceiving of it as conducive to our own morality that we should as sume that our investigation of nature will have a moral pay off, that by extending our knowledge of the laws and systematic connections of nature we will ultimately learn better how to achieve discipline as a natural condition for the exercise of freedom and how to achieve hap piness insofar as that, suitably constrained, is the object of morality.

That our investigation of nature should be guided by the regulative conception of it as a system conducive to the realization of human mor ality seems, in any case, to be the animus of Kant's utter rejection of the fundamental principle of Wolffian teleology, that human beings ought to understand nature as fully as possible in order to best understand the glory of God: "without human beings the whole of creation would be a mere desert," but

> it is not their cognitive faculty (theoretical reason) in relation to which the existence of everything else in the world first acquires its value, so that someone should exist who can **contemplate** the world. For if this con templation of the world were to allow him to represent nothing but things without a final end, then no value would emerge from the fact that they are cognized (*CPJ*, §86, 5:442).

Wolff had argued that improved knowledge of the connections among natural phenomena should be used as means to improve the conditions of human life so that human beings could be in turn improved contem plators of the glory of God. Kant's position, in contrast, seems to be that progress in our knowledge of the system of nature should be an instru ment for progress in our realization of our moral goals, in the first in stance the preservation and promotion of human freedom itself and in the second instance the realization of human happiness insofar as that is not a merely natural end of inclination but the proper object of the moral use of human freedom. In the end, Kant's teleology is an anthro pocentric moral ecology.

Much more would need to be said about the concrete implications of Kant's revised teleology for the actual practice of both natural science and morality to make Kant's regulative teleological vision of philosophy compelling. In particular, there is an analogy that would need to be pur sued between the relationship of the most general, constitutive laws of nature and particular, only regulatively determined empirical laws of na ture, on the one hand, and, on the other, that between the fundamental principle of morality, which is clearly meant to be constitutive, and par ticular duties and obligations, which ought in some sense to be regula

tive. Obviously the rules of the imperfect duties of virtue such as those of self perfection and beneficence toward others could be fruitfully analogized to regulative principles, but there might also be ways in which supposedly perfect duties such as duties of justice regarding prop erty might also be considered regulative. And the analogy between the regulative ideal of the systematic unity of particular laws of nature and a regulative ideal of transforming the natural world into a moral world would have to be explored. But this investigation would be a task for another time.

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Freedom, Teleology, and Rational Causation

Robert Hanna

Abstract

The basic link between Kant's metaphysics of free will and his theory of practical agency is his theory of teleology, i.e., his theory of ends or purposes. In the first part of the paper, I show how Kant's theory of natural teleology, or the directedness of organismic life—biological intentionality—in the two Introductions and second half of the Critique of the Power of Judgment is fundamentally related to his theory of transcendental freedom, and argue that his theory of transcendental freedom entails neither Compatibilism nor Incompatibilism, and constitutes a third alternative, which I call "Post Compatibilism." In the second part of the paper, I show how Kant's theory of rational teleology, or the directedness of human desire—practical intentionality—is fundamentally related to his theory of practical freedom or autonomy, and argue that it entails a special form of internalism about practical reasons that shares much with Hume's theory of practical reasoning, although it also goes well beyond Hume's theory in several crucial ways. By seeing how the biological intentionality of transcendental freedom is essentially connected with the practical intentionality of human desire right up to the level of autonomy, we can then see how, according to Kant, autonomous persons can have full causal efficacy in a physical world. This interpretation of Kant's theory of freedom, which I call "the Embodied Agency Theory," has good textual support and also significant philosophical advantages over the two standard interpretations, the Timeless Agency (Two World) Theory and the Regulative Idea (Two Standpoint) Theory.

> The Human being as a being in the world, self limited through nature and duty. (*OP* 21: 34)[1]

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1 For convenience, I cite Kant's works infratextually in parentheses. The citations include both an abbreviation of the English title and the corresponding volume and page numbers in the standard "Akademie" edition of Kant's works: *Kants gesammelte Schriften*, edited by the Königlich Preussischen (now Deutschen) Akademie der Wissenschaften, Berlin, 1902 ff. I generally follow the standard English translations, but have occasionally modified them where appropriate. For references to the first *Critique*, I follow the common practice of giving page numbers from the A (1781) and B (1787) German editions only. Here is a list of the relevant abbreviations and English translations: *CPJ: Critique of the Power of Judgment*; *CPR: Critique of Pure Reason*; *CPrR: Critique of Reason*; *GMM: Groundwork of the Metaphysics of Morals*; *IUH:* "Idea of a Universal History of Mankind from a Cosmopolitan Point of View"; *MFNS: Metaphysical*

> If one accepts classical physics, free will must apparently be explained as being *compatible* with determinism. The only alternative to compatibilism, if sense is to be made of free will, would be to postulate that the laws of physics do not have universal application and the human free will can cause things to happen contrary to those laws. It might be suggested that Kant found a third alternative, but if so it is one I am unable to understand.
>
> David Hodgson[2]

> It is only because a person has volitions of the second order that he is ca pable both of enjoying and lacking freedom of the will.
>
> Harry Frankfurt[3]

1. Introduction

Kant was the first post Newtonian philosopher to attempt to face up di rectly and fully to the basic philosophical problems of free will and Uni versal Natural Determinism. Prior to the 18th century, philosophers had always addressed issues about free will in the context of either Fatalism or Universal Divine Determinism. And other 18th century post Newto nian philosophers focused almost exclusively on trying to provide a *phe-nomenology* of free will by which I mean a descriptive theory of the subjective experience or consciousness of free will as opposed to a metaphysics of free will.[4] Furthermore, neither pre 18th century philos ophers nor other 18th century post Newtonian philosophers had clearly framed the free will problem *both* as a problem about explaining the pos sibility of free will in a universally determined natural world *and also* as a problem about the compatibility or incompatibility of free will and Uni versal Natural Determinism. So Kant was unique in trying to address *both* the metaphysics and the phenomenology of free will in the post Newtonian context of Universal Natural Determinism, *and also* the Compatibilism vs. Incompatibilism dilemma.

In the first part of this paper (section 2) I will focus on explaining Kant's theory of what he calls "transcendental freedom." Kant's theory of transcendental freedom is his *metaphysics of free will*. Transcendental

Foundations of Natural Science; *MM: Metaphysics of Morals*; *OP: Opus postumum*; *P: Prolegomena to Any Future Metaphysics*; *Rel: Religion within the Boundaries of Mere Reason*; *VL:* "The Vienna Logic".

2 Hodgson (2002, 86).

3 Frankfurt (1988, 19).

4 See, e.g., Harris (2005).

freedom is how a person can, "from itself" (*von selbst*) (*CPR* A533/B561), be the spontaneous mental cause of certain natural events or processes. If I am that person, then insofar as I am transcendentally free, it follows that I am an ultimate source of my choices and intentional actions precisely because certain events or processes in physical nature are *up to me* or to use Kant's own phrase, *in meiner Gewalt* (literally: "in my control" or "in my power"; *CPrR* 5:94 95). So otherwise put, transcendental freedom is *deep freedom of the will*, *ultimate sourcehood,* or *up-to-me-ness* (as it were, *In-Meiner-Gewalt-Sein*). In this connection I will argue, contrary to standard interpretations,[5] that Kant's theory of transcendental freedom entails *neither* Compatibilism *nor* Incompatibilism, and thereby constitutes what Hodgson aptly calls a "third alternative" to this all too familiar and seemingly exhaustive dichotomy, an alternative which I call *Kant's Post-Compatibilism*.

Then in the second part of the paper (section 3), I will focus on explaining Kant's theory of what he calls "practical freedom." Kant's theory of practical freedom is his *theory of practical agency*. Practical freedom presupposes transcendental freedom, and can be defined in a negative way as the independence of first order volition, or the "power of choice" (*Willkür*), from necessitation by sensible impulses (*CPR* A533/B561), but it is also necessarily equivalent to what Kant calls *autonomy:* "the moral law expresses nothing other than the *autonomy* of pure practical reason, that is, [practical] freedom" (*CPrR* 5:33). Practical freedom or autonomy is how a transcendentally free person can choose or do things by means of her subjective experience or consciousness of recognizing the Categorical Imperative or moral law as a desire overriding, strictly universal, a priori, categorically normative, non instrumental practical reason that has both motivating *and* justifying force. The fact of this subjective experience or consciousness of autonomous agency is what Kant calls "the fact of reason" (*Faktum der Vernunft*) (*CPrR* 5:31). So otherwise put, practical freedom or autonomy is *rational causation*. In this connection I will argue, again contrary to standard interpretations, that Kant's theory of practical freedom or autonomy entails a special form of *internalism about practical reasons* that shares much with Hume's theory of practical reasoning, although, to be sure, it also goes well beyond Hume's theory in several crucial ways.

5 See, e.g., Allison (1990), Hudson (1990), Pereboom (2006), Watkins (2005), and Wood (1984).

The basic link between the topics of the two parts of the paper thus the basic link between Kant's metaphysics of free will and his theo ry of practical agency is Kant's theory of *teleology*, i.e., his theory of *ends or purposes*. In the first part of the paper, I will appeal directly to Kant's theory of *natural* teleology, or *the directedness of organismic life* bi ological intentionality in the two Introductions and second half of the *Critique of the Power of Judgment*, and show how it is fundamentally re lated to transcendental freedom. In the second part of the paper I will appeal directly to his theory of *rational* teleology, or *the directedness of human desire* practical intentionality in the *Groundwork of the Metaphysics of Morals*, the *Critique of Practical Reason*, *Religion within the Boundaries of Mere Reason*, and the *Metaphysics of Morals*. By seeing how the biological intentionality of transcendental freedom is essentially con nected with the practical intentionality of human desire right up to the level of autonomy, we will thereby be able to see very clearly how, according to Kant, autonomous persons can have full causal effi cacy in a physical world. *Freedom is alive.* This interpretation of Kant's theory of freedom which I have elsewhere called *Kant's Embodied Agency Theory*[6] has both good textual support and also significant phil osophical advantages over the two standard interpretations, the Timeless Agency (Two World) Theory and the Regulative Idea (Two Stand point) Theory.

2. Transcendental Freedom and Natural Teleology

What is freedom of the will, does it really exist, and do we really have it?[7] It is intuitive to most philosophers and reflective non philosophers alike that free will, if it really exists, is a person's choosing or doing things without preventative constraints and without inner or outer compulsion (*negative freedom,* or *freedom-from*), together with the ability to choose or do what she wants (*positive freedom*, or *freedom-to*). More over, it also seems to be undeniably true that necessarily a person *P* can freely choose or do something *X* if and only if *P* is causally or mo rally responsible for *X* (*responsibility*). So a minimal definition of free will

6 See Hanna (2006b, ch. 8).

7 See, e.g., Campbell, O'Rourke, and Shier (eds. 2004), Fischer, Kane, Pere boom, and Vargas (2007), Kane (ed. 2002), Kane (2005), and Watson (ed. 2003).

says that it is a person's choosing or doing things with negative freedom, positive freedom, and responsibility.

Now the doctrine of Determinism says that what we specifically choose and do is necessitated by settled facts about the past together with the general causal laws of nature. But more precisely, *Universal Natural Determinism* is the doctrine that the complete series of settled past events, together with the general causal laws of nature, causally necessi tate the specific character of all future events, including all the choosings and doings of persons, and that all those future events can in principle be scientifically predicted a priori. Universal Natural Determinism there fore directly entails that causally necessarily if any two events E_1 and E_2 have *exactly the same past*, then E_1 and E_2 will also have *exactly the same future*. In other words, if Universal Natural Determinism is true, then the future of all current events and processes, including all the cur rent choosings and doings of persons, is already *causally necessarily closed as to its existence and specific character.*

For clarity's sake, it is crucial to distinguish Universal Natural Deter minism from a much stronger doctrine which says that the complete series of settled past events, together with the general causal laws of na ture, *logically* necessitate the existence and specific character of all future events, including all the choosings and doings of persons, and that all those future events can in principle be *logically* predicted a priori.

This is *Fatalism*. In other words, according to Fatalism there *is no contingency whatsoever either in history or nature*. While Fatalism is both consistent with Universal Natural Determinism and indeed *entails* Uni versal Natural Determinism, nevertheless Universal Natural Determin ism does *not* entail Fatalism. You can consistently affirm Universal Nat ural Determinism and deny Fatalism. Even if every moment's existence and specific character is in itself *logically contingent,* in the sense that it logically could have been otherwise, Universal Natural Determinism can still be true. Universal Natural Determinism says only that any later event in time is *causally* necessitated to exist and have a certain spe cific character, *given* that the past exists in the specific way that it does exist, and *given* the specific character of the general causal laws of nature. But the past

did not *logically have to be* just that way, nor did the general causal laws of nature *logically have to be* just that way. Similarly, Universal Nat ural Determinism also does not logically guarantee that any particular moment of time will actually exist. For all that Universal Natural Deter minism says, it is logically possible that the world *might never have existed.*

Of course the world does actually exist now. So either the world always existed, or perhaps the world started to exist and then continued to exist until now, or else the world pops in and out of existence discontinuously. But in any case, it is logically possible that it might also *fail* to exist at any later time.

It is equally crucial to distinguish Universal Natural Determinism from another stronger doctrine which says that nature is initially created and also sustained at every later moment by the irresistible causal powers of an all knowing and all good deity. This is *Universal Divine Determinism*. While Universal Divine Determinism is both consistent with Universal Natural Determinism and indeed *entails* Universal Natural Determinism, nevertheless Universal Natural Determinism does *not* entail Universal Divine Determinism. Even if an all powerful, all knowing, all good, world creating, and world sustaining deity does *not* exist, Universal Natural Determinism can still be true.

Granting the important differences between Fatalism, Universal Divine Determinism, and Universal Natural Determinism, then the problem of free will and Universal Natural Determinism is this:

> How can persons choose or do things with negative freedom, positive freedom, and responsibility in a universally naturally determined world?

Or more starkly and vividly framed, the problem of free will and Universal Natural Determinism is this:

> How is possible to prove that I am really a free person and not just a deterministic automaton—one of Kleist's ghastly puppets[8]—epiphenomenally dreaming that I am a free person?

As if *that* problem were not hard enough, there is also a second and equally hard problem of free will and Universal Natural Determinism that follows directly from it. Compatiblism says that free will and Universal Natural Determinism are mutually consistent. And Incompatibilism says that free will and Universal Natural Determinism are mutually inconsistent. So the second problem of free will and Universal Natural Determinism is whether we should accept Compatibilism or Incompatibilism.

As I mentioned in section 1, Kant was the first post Newtonian theorist of free will to try to face up directly and fully to the two basic free will problems. It is well known to contemporary Kantians, however, and especially to contemporary Kantian ethicists, that in scholarly

8 See Kleist (1980).

space there exist at least two sharply distinct *versions* of Kant's theory of freedom, each of which has a fairly solid grounding in Kant's texts: the Timeless Agency Theory,[9] and the Regulative Idea Theory.[10]

The Timeless Agency Theory adopts the classical Two World or Two Object Theory of the noumena vs. phenomena distinction and asserts that a noumenal subject is autonomous in that it has absolutely spontaneous causal efficacy, or nomological sufficiency of the self legislating positively noumenal will, apart from all alien causes and all sensible impulses, in conformity with the Categorical Imperative, by causing, *from outside of time and space*, phenomenal human behavioral movements (in outer sense) and psychological processes (in inner sense) that are themselves independently necessarily causally determined by general causal laws of nature plus the settled empirical facts about the past. The Timeless Agency Theory is supported primarily by texts drawn from the *Critique of Pure Reason* (esp. *CPR* A538 558/B566 586).

By contrast, the Regulative Idea Theory adopts the neoclassical Two Standpoint Theory or Two Aspect Theory of the noumena vs. phenomena distinction and says that we are required by our practical reason to believe or take ourselves to be acting morally only under the rational idea of own practical freedom or autonomy. The Regulative Idea Theory is supported primarily by section III of *Groundwork of the Metaphysics of Morals*.

Both the Timeless Agency Theory and the Regulative Idea Theory have some serious problems.

On the one hand, it is crucial to note that the texts which best support the Timeless Agency Theory are explicitly said by Kant to demonstrate only the bare conceivability and logical consistency of the notions of freedom and Universal Natural Determinism, and neither the *reality* nor the *real (i.e., strong metaphysical, synthetic a priori) possibility* of freedom:

> Do freedom and natural necessity in one and the same action contradict each another? And this we have answered sufficiently when we showed that since in freedom a relation is possible to conditions of a kind entirely different from those in natural necessity, the law of the latter does not affect the former; hence each is independent of the other, and can take place without being disturbed by the other [...]. It should be noted here that we have not been trying to establish the **reality** of freedom, as a faculty

9 See, e.g., Allison (1990, 47–53), Pereboom (2006), Watkins (2005, chs. 5–6), and Wood (1984).

10 See, e.g., Allison (1990, ch. 13), and Wood (1999, 180–182).

> that contains the causes of appearance in our world of sense [...]. Further, we have not even tried to prove the **possibility** of freedom; for this would have not succeeded either, because from mere concepts *a priori* we cannot cognize anything about the possibility of any real ground or any causality. (*CPR* A557–558/B585–586).

Correspondingly, the most serious problem with the Timeless Agency Theory is that it is really (i.e., strongly metaphysically, synthetic a priori) *impossible*. If all phenomenal events are all independently necessarily determined by natural laws together with antecedent facts, then the noumenal causality of the will implies the *non-standard causal overdetermination* of phenomenal human behavioral movements in outer sense and psychological processes in inner sense. The thesis of non-standard causal overdetermination says that

(i) there can be two ontologically distinct nomologically sufficient causes of the same event, one of which is physical and one of which is non-physical, and each of which can operate in the absence of the other,

and correspondingly

(ii) that there can be two complete and independent causal explanations of the same event.

But as Jaegwon Kim has compellingly argued, it seems entirely reasonable to hold that if there already exists a nomologically sufficient physical cause of some event, and if correspondingly a complete and independent physical causal explanation of that same event also exists, then this cause and this causal explanation together necessarily *exclude* there being any other distinct nomologically sufficient cause or distinct causal explanation of the same event.[11] So the non-standard causal overdetermination implied by the Timeless Agency Theory, although barely conceivable and logically possible, is really (i.e., strongly metaphysically, synthetic a priori) ruled out.

On the other hand, it is also crucial to note that the texts which best support the Regulative Idea Theory are explicitly said by Kant to demonstrate only that "freedom must be presupposed (*vorausgesetzt*) as a property of the will of all rational beings" (*GMM* 4:447) and that "all human beings think of themselves as having free will" (*GMM* 4:455). Correspondingly, the most serious problem with the Regulative Idea

11 See Kim (1993).

Theory is that even if it is true, it simply does not do the philosophical work required of the noumenal causation *vs*. phenomenal causation dis tinction, because it does not entail either the reality or the real (i. e., strong metaphysical, synthetic a priori) possibility of freedom of the will, but rather entails only at best our *belief* in its reality or real possibil ity, which is not only ontologically deflationary but also, arguably, does not even rationally *justify* that belief. In fact, our belief in freedom is only a certain kind of *practical* belief — in effect, a *moral faith* — which ac cording to Kant is a *warranted* practical commitment that is nevertheless held on *theoretically insufficient* grounds:

> Only in a **practical relation**, however, can taking something that is the oretically insufficient to be true be called believing (*Glauben*). This practical aim is either that of **skill** or **morality**, the former for arbitrary and contin gent ends, the latter, however, for absolutely necessary ends. (*CPR* A823/ B851).

So this moral faith could still be theoretically *wrong*. For all we know, and for all that the Regulative Idea Theory says, we could *still* be noth ing but Kleistian puppets — deterministic automata epiphenomenally dreaming that we are free.

For these reasons, it seems to me that both the Timeless Agency Theory and the Regulative Idea Theory are very likely to be objectively false, whatever else we may think about the question of which theory most accurately reflects Kant's own considered views about freedom of the will.

In this section I want to develop and defend something I will call *Kant's Biological Theory of Transcendental Freedom*.[12] Like the Timeless Agency Theory and the Regulative Idea Theory, the Biological Theory also has a solid grounding in Kant's texts, although it is primarily sup ported by texts drawn from what I like to call the "post Critical" period after 1787,[13] especially including the *Critique of the Power of Judgment* and the *Opus postumum*. But it differs sharply from the other two theories in that it avoids their serious philosophical problems and also, in my opin ion, is arguably quite close to being objectively true. So I think that we should prefer it both on grounds of inference to the most rationally charitable interpretation — which says: ascribe to Kant the theory which, by our own rational lights, and consistently with as many Kant

12 Kant's Biological Theory of Transcendental Freedom is just one important part of Kant's Embodied Agency Theory of freedom—see note 6 above.

13 See Hanna (2006a).

ian texts as possible, Kant himself would take to be the most philosoph ically intelligible and defensible view and also for philosophically inde pendent reasons. Above all, however, the Biological Theory shows how transcendental freedom of the will deep freedom, ultimate source hood, or up to me ness can also be *a natural dynamic process*. If I am correct, this makes Kant a *liberal naturalist*,[14] who thinks that physical na ture *itself* inherently contains, as proper parts of its basic causal and nomological structure, some irreducible rational mental events, rational mental processes, rational mental properties, and rational mental facts that are causally efficacious, a priori, and categorically normative. This liberal naturalism follows directly from Kant's *transcendental idealism*.[15] But an even more direct way of seeing Kant's liberal naturalism is to rec ognize that rational human agents or real human persons for him are necessarily also *rational human living organisms, or animals capable of intentionality* whose rational mindedness and rational directedness towards objects in the world, ends and purposes, other real persons, and them selves, is fully continuous with their animality:

> The human being, as animal, belongs to the world, but, as person, also to the beings who are capable of rights—and, consequently, have *freedom* of the will. Which ability essentially differentiates [the human being] from all other beings; *mens* is innate to [the human being]. (*OP* 21:36).

Kant's theory of transcendental freedom is based on his notion of *spontaneity*. For him, *X* is spontaneous if and only if *X* is a conscious mental event that expresses some acts or operations of a creature, and *X* is

i) causal dynamically *necessarily unprecedented*, in the two part sense that
   (ia) conscious mental events of those specific sorts have never ac tually happened before,

and

   (ib) the settled empirical facts about the past together with the gen eral causal laws of nature do not provide nomologically suffi cient conditions for the existence or specific character those conscious mental events,

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14 Liberal naturalism says that there are no non spatiotemporal entities, and that everything has intrinsic physical properties, but that everything *also* has intrinsic mental properties *and* intrinsic non empirical properties. See, e.g., Rosenberg (2004, 8–10).

15 For characterizations of Kant's transcendental idealism, see Hanna (2001, sec tions 2.3 to 2.4), and Hanna (2006b, section 6.1).

ii) *underdetermined* by external sensory informational inputs, and also by prior desires, even though it may have been triggered by those very inputs or motivated by those very desires
iii) *creative* in the sense of being recursively constructive, or able to gen erate infinitely complex outputs from finite resources,

and also

iv) *self-guiding*. (*CPR* A51/B75, B130, B132, B152, A445 447/B473 475).

Furthermore, spontaneity can be either *relative* or *absolute*. Relative spontaneity requires *inputs* to the conscious mind, whereas absolute spontaneity allows the conscious mind *to generate its own outputs without any triggering inputs*. For example, human a priori cognition is only rel atively spontaneous because it requires sensory inputs via empirical in tuition, whereas an intellectual intuition, if it existed, would be abso lutely spontaneous because it could cause the objects of its thoughts to exist just by thinking them (*CPR* A19 22/B33 36, B71 72). Now according to Kant, the concept of a cause analytically entails the concept of its effect, and the general schematized pure concept of CAUSE says that something *X* (the cause) necessitates something else *Y* (its effect) in time according to a necessary rule or law. Or equivalent ly, according to Kant, to say that *X* causes its effect *Y* is to say that *X* is nomologically sufficient for *Y* in time (*CPR* B112, A144/B183). Then *X* is a relatively or absolutely spontaneous cause of its effect *Y* if and only if

(1) *X* is nomologically sufficient for *Y* in time,

and

(2) *X* is a conscious mental event that is necessarily unprecedented, un derdetermined by external sensory inputs and desires, creative, and self guiding.

Finally, absolutely spontaneous mental causation is the same as *transcendental freedom:*

> By freedom in the cosmological sense […]. I understand the faculty of be ginning a state **from itself** (*von selbst*), the causality of which does not in turn stand under another cause determining it in time in accordance with the law of nature. Freedom in this signification is a pure transcenden tal idea, which, first, contains nothing borrowed from experience, and sec ond, the object of which cannot be given determinately in any experience […]. But since in such a way no absolute totality of [natural] conditions in

> causal relations is forthcoming, reason creates the idea of a spontaneity, which could start to act from itself, without needing to be preceded by any other cause that in turn determines it to action according to the law of causal connection. (*CPR* A533/B561).

Although transcendental freedom is a particularly robust kind of *mental* causation, in the second *Critique* Kant sharply distinguishes transcendental freedom from mere *psychological* freedom:

> These determining representations [i.e., instincts or motives] themselves have the ground of their existence in time and indeed in the *antecedent state*, and in a preceding state, and so forth, these determinations may be internal and they may have psychological instead of mechanical causality, this is, produce actions by means of representations and not by bodily movements; they are always *determining grounds* of the causality of a being insofar as its existence is determinable in time and therefore under conditions of past time, which are thus, when the subject is to act, *no longer within his control* and which may therefore bring with them psychological freedom (if one wants to use this term for a merely internal chain of representations in the soul) but nevertheless natural necessity, leaving no room for *transcendental freedom* which must be thought of as independence from everything empirical and so from nature generally, whether regarded as an object of inner sense in time only or also as an object of outer sense in both space and time; without this freedom (in the latter and proper sense), which alone is practical a priori, no moral law is possible and no imputation in accordance with it. (*CPrR* 5:96–97).

Otherwise put, psychological freedom is the subject's subjective experience or consciousness of choosing or acting without being prevented, and without inner or outer compulsion. As Kant explicitly points out, and as Hume and Leibniz also noted in anticipation of contemporary Compatibilism, it is both logically and metaphysically possible to be psychologically free without being transcendentally free. This is what Kant very aptly and famously calls "the freedom of a turnspit" (*CPrR* 5:97). So psychological freedom is not a sufficient condition of transcendental freedom.

Nevertheless, according to Kant psychological freedom remains a *necessary* condition of transcendental freedom. And this seems independently highly plausible. No one could be transcendentally free and also at the same time undergo the subjective experience or consciousness of being prevented from choosing or acting, or of being inwardly or outwardly compelled to choose or act. Indeed, as the second Analogy of Experience explicitly shows, psychological freedom is necessarily built into the mental representation of *any* objective causal sequence, via what Kant calls the "the **subjective sequence** of apprehension,"

whose ordering is always subjectively experienced as "entirely arbitrary" (*ganz beliebig*) and not necessitated (*CPR* A193/B238).

When we ascribe transcendental freedom specifically to the will of a real human person, then in addition to the positive factor of absolute spontaneity, which confers deep freedom, ultimate sourcehood, or up to me ness on the person's choices and acts, and psychological free dom, which guarantees the subjective experience or consciousness of being unprevented and uncompelled in one's choices and acts, transcen dental freedom *also* guarantees the person's choices and acts occur inde pendently of all "alien causes," that is, independently of all pathological inner and unowned outer sources of nomologically sufficient compul sion:

> The will is a kind of causality that living beings have so far as they are ra tional. *Freedom* would then be that property whereby this causality can be active, independently of alien causes *determining* it; just as *natural necessity* is a property characterizing the causality of all non rational beings—the prop erty of being determined to activity by the influence of alien causes. The above definition of freedom is *negative*. (*GMM* 4:446).

Practical freedom presupposes but also exceeds transcendental freedom, in that practical freedom is the absolute spontaneity of the will inde pendently of all alien causes and also independently of *all sensible impulses* (empirical desires):

> Freedom in the practical sense is the independence of the power of choice (*Willkür*) from necessitation by impulses of sensibility. For a power of choice is sensible insofar as it is pathologically affected (through moving causes of sensibility); it is called an animal power of choice (*arbitrium bru tum*) if it can be pathologically necessitated. The human power of choice is indeed an *arbitrium sensitivum*, yet not *brutum*, but *liberum*, because sensi bility does not render its action necessary, but in the human being there is a faculty of determining oneself from oneself, independently of necessitation by sensible impulses. (*CPR* A534/B562).

As I mentioned above, however, this is merely a negative characteriza tion of practical freedom. As positively characterized, practical freedom also involves the capacity for *self-legislation* in conformity with the Cat egorical Imperative or moral law. Or in other words, practical freedom is necessarily equivalent with *autonomy* (*GMM* 4:440 441, 446 463).

It may seem, on the face of it, that there should be no direct con nection whatsoever between the person's absolutely spontaneous, psy chologically free, autonomous will and her existence in physical nature. Indeed, that is the basic idea behind the classical theory of *Agent Causa-*

tion, according to which the freely willing person necessarily stands *outside* the natural causal order in space time.[16] And Kant is often cited as a paradigmatic defender of the Agent Causation theory as per the Time less Agency Theory.[17] But in fact Kant himself explicitly asserts otherwise:

> Practical freedom can be proved through experience. For it is not merely that which stimulates the senses, i.e., immediate affects them, that deter mines human choice, but we always have a capacity to overcome impres sions on our sensory faculty of desire by representations of that which is useful or injurious even in a more remote way; but these considerations about that which in regard to our whole condition is desirable, i.e., good and useful, depend on reason. Hence this also yields laws that are im peratives, i.e., objective **laws of freedom**, and that say **what ought to happen**, even though it never does happen [...]. We thus cognize practical freedom through experience, as one of the natural causes, namely a causal ity of reason in the determination of the will. (*CPR* A802–803/B830–831)
>
> Two things fill the mind with ever new and increasing admiration and reverence, the more often and more steadily one reflects on them: *the starry heavens above me* [i.e., nature] *and the moral law within me* [i.e., freedom]. I do not need to search for them and merely conjecture them as though they were veiled in obscurity or in the transcendent region beyond my horizon; I see them before me and connect them immediately with the conscious ness of my existence. (*CPrR* 5:161–162)
>
> Now although there is an incalculable gulf fixed between the domain of the concept of nature, as the sensible, and the domain of the concept of freedom, as the supersensible [...]: yet the latter should have an influence on the former, namely the concept of freedom should make the end that is imposed by its laws real in the sensible world; and nature must conse quently also be able to be conceived in such a way that the lawfulness of its form is at least in agreement with the possibility of the ends that are to be realized in it in accordance with the laws of freedom. (*CPJ* 5:176).

In other words, Kant is explicitly saying that the transcendental freedom of real human persons is *both really (i.e., strongly metaphysically, synthetic a priori) possible* and *real*. I will now reconstruct Kant's reasoning for this perhaps surprising thesis, and in so doing, argue that his theory of tran scendental freedom can be plausibly interpreted as a *biologically-based* theory. As I mentioned above, I shall be drawing primarily on texts from Kant's post Critical period after 1787, and in particular from the third *Critique*.

16 See, e.g., Chisholm (2003), Clarke (1996), and O'Connor (2000).
17 See, e.g., Watkins (2005).

In the two Introductions and the second half of the *Critique of the Power of Judgment* Kant argues that the concepts LIFE and ORGANISM, and in particular the concept of a "natural purpose" (*Naturzweck*) or living organism, are not ordinary empirical concepts of matter, and that they invoke a type of causation which cannot be known in classical Newtonian mechanistic physics:

> For a body to be judged as a natural purpose in itself and in accordance with its internal possibility, it is required that its parts reciprocally produce each other, as far as both their form and their combination is concerned, and thus produce a whole out of their own causality, the concept of which, conversely is in turn the cause (in a being that would possess the causality according to concepts appropriate for such a product) of it in accordance with a principle; consequently the connection of **efficient causes** could at the same time be judged as an **effect though final causes.** In such a product of nature each part is conceived as if it exists only **through** all the others, thus as if existing **for the sake of the others** and **on account** of the whole, i.e., as an instrument (organ), which is, however, not sufficient (for it could also be an instrument of art, and thus represented as possible at all only as a purpose); rather it must be thought of as an organ that **produces** the other parts (consequently each produces the others reciprocally), which cannot be the case in any instrument of art, but only of nature, which provides all the matter for instruments (even those of art): only then and on that account can such a product, as an **organized** and **self-organizing** being, be called a **natural purpose.** (*CPJ* 5:373–374).
>
> Strictly speaking, the organization of nature is […] not analogous with any causality that we know. (*CPJ* 5:375).

Because the causality of living organisms is scientifically unknowable, the basic concepts of biology are merely "regulative" or "hypothetical" concepts of reason, that is, heuristic and logical fictional concepts for the unification and promotion of natural scientific inquiry (*CPJ* 5:369–415; see also *CPR* A642–647/B670–675).[18] But it does not follow that organismic life (in particular, the organismic life of my own animal body) cannot be directly cognized by *non-conceptual, non-propositional, non-judgment-based* means. Furthermore, as I have argued elsewhere, Kant is a consistent and explicit defender of the thesis of Non Conceptualism about mental content.[19]

The thesis of *Non-Conceptualism* about mental content says that representational content is neither solely nor wholly determined by a conscious animal's conceptual capacities, and that at least some contents are

18 See, e.g., Ginsborg (2001), Guyer (2005, chs. 5 and 13), and Kreines (2005).
19 Hanna (2005).

both solely and wholly determined by its non conceptual capacities.[20] Non Conceptualism is sometimes, but not always, combined with the further thesis that non conceptual capacities and contents can be shared by rational human animals, non rational human animals (and in particular, infants), and non human animals alike. But in any case, Non Conceptualism is directly opposed to the thesis of *Conceptualism* about mental content, which says that representational content is solely or wholly determined by a conscious animal's conceptual capacities.[21] Conceptualism is also sometimes, but not always, combined with the further thesis that the psychological acts or states of infants and non human animals lack mental content.

Non Conceptualism undeservedly suffers from bad press. This is because it is often confused with adherence to what Wilfrid Sellars aptly called "the Myth of the Given," whereby non conceptual content would be nothing the unstructured causal sensory "given" input to the cognitive faculties, passively waiting to be carved up by concepts and propositions.[22] But this "sensationalist" conception of non conceptual content is not in fact a thesis about *representational* content at all, but rather only a nowadays generally discredited thesis about how *phenomenal* content relates to conceptual content.

In my opinion, Kant is the founding father of Non Conceptualism.[23] Here are four texts that strongly confirm this claim:

> Objects can indeed appear to us without necessarily having to be related to the functions of the understanding. (*CPR* A89/B122).
> That representation which can be given prior to all thinking is called **intuition.** (*CPR* B132).
> Appearances could after all be so constituted that the understanding would not find them in accord with the conditions of its unity […]. Appearances would nonetheless offer objects to our intuition, for intuition by no means requires the functions of thinking. (*CPR* A90/B123).
> Concept differs from intuition by virtue of the fact that all intuition is singular. He who sees his first tree does not know what it is that he sees. (*VL* 24:905).

If I am correct that Kant is the original non conceptualist, then this is also a deliciously historically ironic fact, because he is almost universally

20 See, e.g., Bermúdez (2003), Evans (1982, esp. chs. 4–6), and Gunther (ed. 2003).
21 See, e.g., McDowell (1994), Sedivy (1996), and Brewer (1999).
22 See Sellars (1963), and McDowell (1994).
23 See Hanna (2005), and Hanna (2009).

regarded as the founding father of *Conceptualism* and the *nemesis* of Non Conceptualism. York Gunther puts this view perfectly: In his slogan, "Thoughts without content are empty, intuitions without concepts are blind," Kant sums up the doctrine of conceptualism.[24]

Nevertheless, as I have also argued elsewhere, this famous slogan does *not* mean what Kantian conceptualists think it means.[25] In my opin ion, what Kant's famous slogan about blind intuitions and empty thoughts actually means is that intuitions and concepts must always be combined together *for the special purpose of making objectively valid judgments*. But *outside* that context it is also perfectly possible for there to be directly referential intuitions without concepts ("blind intuitions," e.g., someone's first cognitive encounter with a tree), and also to have thinkable concepts without intuitions ("empty concepts," e.g., concepts of things in themselves). Indeed, it is precisely the fact of blind intuitions, whose semantic structure and psychological function are essentially distinct from the semantic structure and psychological function of concepts, that drives Kant's need to argue in the B edition Transcendental Deduction that all and only the objects of possible human experience are necessarily conceptualizable under the pure con cepts of the understanding or categories, and necessarily constrained by the transcendental laws of a pure science of nature. Otherwise blind in tuitions might pick out objects of human experience that are partially or wholly unconceptualizable, and nomologically intractable. In this way, Kant's theory of concepts and judgment in the *Transcendental Analytic* provides foundations for Conceptualism. But equally and oppositely, Kant's theory of intuition in the *Transcendental Aesthetic* also provides foundations for his Non Conceptualism.

Assuming Kant's Non Conceptualism, then, what I am saying is that according to him, we have a direct non conceptual conscious awareness of our own biological, embodied, affective emotional, and practical lives. According to Kant in the First Part of the third *Critique*, the feel ings of pleasure and pain, bodily affects including bodily desires and drives, and proprioceptive feelings, constitute "the feeling of life" (*CPJ* 5:204, 278), or the feeling of embodied vitality. Furthermore, there is an essential connection between the affective emotional psy chological life of my mind and the biological life of my own body:

24 Gunther (ed. 2003, 1).

25 See, e.g., Hanna (2001, 198–203), and Hanna (2004, section 1.3.1).

> [L]ife is the subjective condition of all our possible experience. (*P* 4:335). Life without the feeling of the corporeal organ is merely consciousness of one's existence, but not a feeling of well or ill being, i.e., the promotion or inhibition of the powers of life; because the mind for itself is entirely life (the principle of life itself), and hindrances and promotions must be sought outside it, though in the human being himself, hence in combination with his body. (*CPJ* 5:278).

This striking Kantian metaphysical thesis, as I understand it, means that biological life is not only *strongly continuous* with conscious minds like ours in the sense that biological life contains everything metaphysically required for conscious minds like ours but also is in fact *literally identical* with conscious or non conscious mind.[26] So our non conceptual affective emotional consciousness in inner sense *entails* the existence of our embodied animal lives. Or in other words, conscious beings like us are necessarily *also* living organisms, and the natural teleology of living organisms is the same as their *biological intentionality*.

These are all crucially important points. The semantic and epistemic constraints that Kant places on teleological judgments about distal material objects in space in the context of biological science namely, that such judgments are always "regulative" and not "constitutive" do *not* in fact apply to the human conscious experience of embodiment, which is essentially intuitional, and affective emotional in character, and *not* conceptual, propositional, or judgmental. So there is an important Kantian distinction to be drawn between teleological *judgments* (which are neither directly referential nor existentially committed, because they are essentially based on concepts and regulative) and teleological *intuitions* (which are both directly referential and also existentially committed). According to Kant, then, I have *teleological inner sense intuitions* of my own biological life. In this way, even if teleological *judgments* are only regulative, I can still have a non conceptual, non propositional, non judgment based teleological *phenomenology* that is fully constitutive. If so, then for Kant there *are* real biological facts in nature.

26 See, e.g., Hanna and Maiese (2009, chs. 7–8), and Thompson, *Mind in Life* (2007). Maiese and I defend the metaphysically significant thesis that mind and life are strongly continuous, but *not* the even stronger Kantian identity thesis, which says that mind = life. On our view, although biological life contains everything that is metaphysically required for consciousness like ours, these metaphysical elements are not always and everywhere sufficiently complex or well organized for the dynamic emergence of mindedness. So for us, not every living organism is conscious—only the suitably complex animals.

It is just that I cannot *scientifically know* them. But I can still *truly consciously feel* at least some of them, precisely by consciously feeling my own embodied animal life. Most importantly of all, by way of teleological intuitions, according to Kant I can *truly consciously feel my own transcendental freedom:*

> *Sensible life* has, with respect to the *intelligible* consciousness of its existence , (consciousness of freedom), the absolute unity of a phenomenon, which, so far as it contains merely appearances of the disposition that the moral law is concerned with (appearances of the character), must be appraised not in accordance with the natural necessity that belongs to it as appearance but in accordance with the absolute spontaneity of freedom. (*CPrR* 5:99).

This in turn raises a further very important general issue about how the biological and psychological properties of rational human animals are cognized or known in the exact sciences. Kant has notoriously high standards for something's qualifying as a science. Not only must a science involve a systematic organization of objective facts or objective phenomena of some sort, it must also be strongly nomological in the sense that it expresses necessary a priori laws (*MFNS* 4:468). Sciences in this sense, in turn, can include either "constitutive" (existentially committed without conditions, and assertoric) principles or else "regulative" (at best hypothetically existentially committed, logical fictional, and non assertoric) principles. Now an exact science can be a naturally mechanized or *physical* science – that is, an exact science of material nature – only if its phenomena and its laws are mathematically describable (*MFNS* 4:470). But as I have argued elsewhere, Kant's notion of mathematics is significantly narrower than our contemporary notion.[27] So we must assume that mathematical describability for Kant is equivalent to analyzability in terms of "primitive recursive arithmetic" or PRA, the quantifier free theory of the natural numbers and the primitive recursive functions over the natural numbers – the successor function, addition, multiplication, exponentiation, etc.[28] So for Kant, a given theory will be an exact science of material nature only if its underlying mathematics is no more complex than PRA.

As we have seen, Kant regards biology as merely regulative nonmechanistic "life science" that supplements Newtonian deterministic, mechanistic mathematical physics with the teleological concept of a natural purpose or living organism (*CPJ* 5:369–415). But at the same time

27 See Hanna (2002).
28 See Skolem (1967).

Kant regards this biological supplementation of physics as *explanatorily necessary*. And that is because biology provides concepts of natural phe nomena that are themselves explanatorily irreducible to deterministic, mechanistic concepts:

> It is quite certain that we can never adequately come to know the organ ized beings and their internal possibility in accordance with merely me chanical principles of nature, let alone explain them; and this is indeed so certain that we can boldly say that it would be absurd for humans ever to make such an attempt or to hope that there might yet arise a New ton who could make comprehensible even the generation of a blade of grass according to natural laws. (*CPJ* 5:400).

Translated into contemporary terms, this means that according to Kant, biology adds the notion of the non linear, non equilibrium dynamics of *self-organizing thermodynamic systems*,[29] to the familiar classical notions of mechanistic causation and the linear equilibrium dynamics of inertial physical systems. Self organizing thermodynamic systems are unified collections of material elements in rule governed or patterned motion, involving heat and other forms of energy, that also have *dissipative struc ture* and *natural purposiveness*. A dissipative structure is how the natural energy loss or entropy in a thermodynamic system is absorbed and dis persed (hence "dissipated") by the systematic re introduction of energy and matter into the system, via a non static causal balance between the inner states of the system and its surrounding natural environment. And natural purposiveness is how a thermodynamic system with dissipative structure self generates forms or patterns of order that determine its own causal powers, and in turn place constraints on the later collective behaviors, effects, and outputs of the whole system, in order to maintain itself. The prime example of a self organizing thermodynamic system is a living organism. In other words, self organizing thermodynamics is *natural creativity*. The notion of "self organization" used by contempo rary theorists of self organizing thermodynamic systems is broader than Kant's, in that it includes non living complex systems as well, e.g., the rolling hexagonal "Bénard cells" that appear as water is heated, and thunderstorms. Kant's self organizing systems are all holistically cau sally integrated or "autopoietic," such that the whole and the parts mu

29 See, e.g., Haken, (1996), Juarrero (1999), Kelso (1995), Port and Van Gelder (eds. 1995), Thelen and Smith (1994), Varela (1979), and Weber and Varela (2002).

tually produce each other. Or otherwise put, Kant's self organizing sys tems are all living organisms.

The general mathematical theory of complex dynamic systems is called "dynamical systems theory" or DST. The mathematics of DST is essentially richer than PRA in that it includes the full range of non linear functions. Given the notion of a self organizing thermodynamic system, DST predicts that there are natural systems of interacting proper parts or elements whose actual behaviors over time can be neither dig itally computed nor nomologically predicted due to random exchanges of causal information, energy, and matter with the surrounding environ ment, and which exemplify *ontologically emergent* causally efficacious properties that are neither reducible to nor strictly determined by the intrinsic non relational properties of the elements of the system.[30] For example, according to the accounts provided by contemporary cosmo logical physics, the Big Bang and black holes are self organizing thermo dynamic systems with ontologically emergent properties.[31]

Now for our current purposes what is most crucial is not the fact that the Big Bang is a self organizing thermodynamic system, but rather that for Kant the biological, conscious, and rational processes of human animals *also* constitute self organizing thermodynamic systems. They are, as it were, *little bangs*. Like all living organisms, they are causally ef ficacious in physical nature, yet they are also underdetermined by gen eral deterministic, mechanistic laws of nature and *nomologically unique*. This means that via their conscious, living, absolutely causally spontane ous rational intentional choices and acts, they bring into existence "one off" or one time only causal dynamical laws of biological, conscious, and rational activity, which enrich and supplement the repertoire of general deterministic, mechanistic natural causal dynamic laws.

On this Kantian picture of physical nature, most explicitly (but un fortunately, only fragmentarily) presented in the *Opus postumum,* the complete set of general deterministic mechanistic natural causal dynam ic laws provides a *skeletal* causal dynamic architecture for nature, which is then gradually *fleshed in* by the one off laws of self organizing thermo dynamic systems. So for Kant, not only is there *natural entropy* via deter ministic, mechanistic processes, there is also a *natural generative teleology* in accordance with the naturally creative operation of "epigenesis," ac cording to which every organism contains a relatively spontaneous

30 See, e.g., Silberstein and McGeever (1999).

31 See, e.g., Hawking (1988).

"productive capacity" for constructing its own process of self organizing growth from environmental inputs (*CPJ* 5:421 425). As with organ isms, so too the basic formal principles of epigenesis apply to the Big Bang, black holes, the creation of stars, the atmospheric and topological causal system of the Earth, thunderstorms, and the surface structure of boiling water. For the purposes of correctly understanding Kant's theory of transcendental freedom, we must be able to see how it is no trivial fact that in the 1750s, he wrote treatises on the rotation of the Earth, the age of the Earth, universal natural history, fire, earthquakes, and the theory of winds. Kant was in fact a proto theorist of complex dy namic systems, lacking only the essentially richer mathematics of DST and the other formal tools of modern biology, chemistry, and physics. In this way, for Kant nature inherently contains not only *automatic* or mechanized processes, but also *naturally creative* or self organizing ther modynamic processes. For Kant, nature essentially grows and has a com plex dynamic history.

There is therefore for Kant an irreducible *explanatory gap* between biology and classical or Newtonian physics, which is the same as the contemporary explanatory gap between the non linear, non equilibri um, non mechanistic dynamics of self organizing living organismic thermodynamic systems on the one hand, and the classical linear, equi librium, mechanistic dynamics of inertial, non living physical systems on the other hand. According to Kant, all biological facts are explana torily irreducible and, if any biological facts can be shown to exist in actuality, then they are also *ontologically* irreducible to the mechanis tic facts of classical or Newtonian physics.[32] But we consciously possess the feeling of biological life occurring in our own bodies via our teleo logical inner sense intuitions, and thus at least some biological facts ac tually exist. Therefore, for Kant there can never be a Newton of the ac tual biological life of the human animal body in both an explanatory *and also* an ontological sense.

In view of these points, Kant then regards empirical psychology as a constitutive and nomological yet nevertheless non deterministic and non mechanistic "life science" of the mind. Even though psychology contains unique "psycho psycho" laws which strictly govern the phe nomenological facts of inner sense[33] which, we now recognize,

32 See Ginsborg (2004).

33 For Kant, laws do not have to be semantically insensitive to contextual condi tions or mentalistic facts in order to be necessary and strict, since they can also

must also be actual biological facts nevertheless mental phenomena cannot be *arithmetically analyzed* because, as we have already seen, their merely subjective temporal ordering in inner sense is "entirely ar bitrary" (*ganz beliebig*) (*CPR* A193/B238) according to the desires and choices of the conscious rational human animal or person. That is, the radical open endedness of possible orderings in inner sense means that the set of all mental phenomena cannot be put into a one to one correspondence with the set of natural numbers, or reconstructed as computable functions of PRA. But Kant's conception of mathematics, together with the Axioms of Intuition and the Anticipations of Percep tion that is, the *mathematical* synthetic a priori principles of pure under standing (*CPR* A160 162/B199 201) and the Analogies of Experi ence, show that mechanistic system of Universal Natural Determinism requires the simple primitive recursive arithmetization of causal process es in time. Thus for Kant psychological laws *cannot be either deterministic or mechanistic:*[34]

> The empirical doctrine of the soul must always remain [...] removed [...] from the rank of what may be called a natural science proper. This is be cause mathematics is inapplicable to the phenomena of the inner sense and their laws [...]. It can, therefore, never become anything more than a his torical (and, as such, as much as possible) systematic natural doctrine of the inner sense, i. e., a natural description of the soul, but not a science of the soul. (*MFNS* 4:471).

Furthermore since mental life entails biological life, it follows directly from Kant's thesis that there can never be a Newton of biological life, that there can also never be a Newton of the human mind. So again, our psychological life, especially including our power of choice or *Will-kür*, cannot be naturally determined or mechanized.[35]

How does this apply to Kant's theory of transcendental freedom? The answer is that according to the Biological Theory, even if all the inert, non living parts of material nature, as metaphysically described by the three Analogies of Experience, fall under the deterministic and mechanistic general causal dynamic laws of physics, nevertheless the ex

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be *non logically or synthetically necessary, that is, restrictedly necessary*. See Hanna (2001, ch. 5). Fodor calls such psychological laws "ceteris paribus laws": see his (1990). Where Kant and Fodor would disagree is that for Kant, these syn thetically necessary psychological laws are wholly particular and *one time only* or "one off," not general.

34 See also Lucas (1970, chs. 24–30), and Lucas (1961).

35 See also Westphal (2004, 229–243).

istence of these natural automata is fully *consistent* with the instantiation of an irreducibly different set of properties in the living organism that is the conscious rational human person. This is a set of irreducible mental, a priori, and categorically normative properties, whose precise pattern of instantiations constitutes both that animal's power of choice and also its transcendental and practical freedom of the will, or its autonomy, and brings ontologically emergent, self organizing, living organismic nomo logically one off or one time only complexities of absolutely spontane ous conscious rational animal movement into existence.

The facts about such absolutely spontaneous conscious rational ani mal intentional body movements are *globally compatibilist* but also *locally incompatibilist*. That is, no general deterministic mechanistic causal laws are *ever* violated by these animal body movements, but also the specific character of these animal body movements is *not* causally necessitated (nor of course is it logically necessitated) by the general deterministic, mechanistic causal laws together with the settled facts about the past. And that is precisely because these absolutely spontaneous conscious ra tional animal intentional body movements are caused by our *transcendental freedom*, which is a non empirical but still fully natural biological fact about rational human animals. Human persons are *not* natural automata, but they *are* living organisms of a very special kind. Indeed, in the *Critique of Practical Reason* Kant explicitly asserts that rational personhood (*Persönlichkeit*) itself is just

> freedom and independence from the mechanism of nature regarded as a ca pacity of a being subject to special laws (pure practical laws given by its own reason). (*CPrR* 5:87).

In this way, the difference between the general deterministic, mechanis tic causal laws of nature with which the categorically normative moral laws of human action are *inconsistent* when applied to one and the same event of rational animal choosing or acting (*CPrR* 5:94 95) and non deterministic, non mechanistic one off or one time only laws of abso lutely spontaneous conscious rational living organismic movement with which categorically normative moral laws are perfectly *consistent* when applied to one and the same event of rational animal choosing or acting, since both transcendental freedom and practical freedom alike require the strict *underdetermination* of a person's choosing and act ing by general deterministic, mechanistic laws together with the settled facts about the past is the metaphysical core of Kant's Biological Theory of Freedom.

This conjunction of *global* Compatibilism together with *local* Incompatibilism, insofar as it is entailed by Kant's Biological Theory of Transcendental Freedom, is what I call *Kant's Post-Compatibilism*.

Before going on, it is worthwhile very briefly comparing and contrasting Kant's Biological Theory of Transcendental Freedom with the standard interpretations of Kant's theory of freedom the Timeless Agency Theory and the Regulative Idea Theory. Obviously, if the Biological Theory is correct, then the Timeless Agency Theory and the Regulative Idea Theory, when construed as individually complete and exclusive interpretations of Kant's theory of freedom, are both wrong. According to the Biological Theory, the intentional agency of transcendentally free rational human animals, or real human persons, is *fully in the natural world of appearances*, precisely because it is fully alive. Hence the noumenally free rational agency of real human persons is *fully here and now*, and not in some other world, alienated from its animal embodiment. So the Timeless Agency Theory is wrong. Moreover, the natural fact of noumenally free rational human agency is an empirically real metaphysical fact, and not merely a non scientific belief generated by taking a certain morally necessary standpoint on ourselves. So the Regulative Idea Theory is also wrong. At the same time, however, the Biological Theory can fully incorporate the Timeless Agency Theory's thesis that the causality of human free will, as absolutely spontaneous, is strictly underdetermined by settled facts about the past together with deterministic causal laws of nature. And the Biological Theory can also fully incorporate the Regulative Idea Theory's thesis that human persons necessarily act under the Idea of their own freedom. Indeed, according to the Biological Theory, not only must we *non-scientifically believe* that we have transcendental and practical freedom of the will, in order to be rational human agents, but also we really and truly *do* have freedom of the will, and we know this directly and non conceptually by simply *being free rational human agents* and thereby *feeling our living free rational human agency*. In this way, the Biological Theory both correctly accepts what is true and philosophically vital in the Timeless Agency Theory and Regulative Idea Theory alike, and also correctly rejects what is false and philosophically inert in them.

3. Rational Teleology and Rational Causation

Let us now suppose, for the purposes of argument, that Kant's Biological Theory of Transcendental Freedom and his Post Compatibilism are both true. That fixes our "third way" interpretation of Kant's metaphysics of free will. What I want to do in this section is to develop a corresponding "third way" interpretation of Kant's theory of practical agency.

It is plausible to hold that *reasons* are (or are provided for agents by) facts that motivate or justify intentional aims and actions or cognitive beliefs, and do not merely cause or mechanically trigger those aims, actions, or beliefs. Reasons that motivate or justify intentional aims and actions are *practical reasons*, and reasons that motivate or justify cognitive beliefs are *epistemic reasons*.

A crucial distinction between different kinds of practical reasons is the distinction between *internal reasons* and *external reasons*.[36] Internal reasons belong to an agent's *set of motivations,* and external reasons do *not* belong to an agent's motivational set. *Internalists* about practical reasons hold that reasons both *motivate* and also *justify* our actions. So all practical reasons are internal reasons. Internalists normally hold a desire based theory about the nature of justifying reasons. By contrast, *externalists* about practical reasons hold that while all practical reasons justify our actions, nevertheless at least some and perhaps all practical reasons *fail to motivate* our actions. So some or all practical reasons are external reasons. Externalists normally hold an objective value based theory of the nature of justifying reasons.

These two opposed positions of Internalism and Externalism about practical reasons may seem to exhaust the logical space. But that is not correct. This is because Kant holds the uniquely intermediate view that while *all* practical reasons are both motivating and justifying, nevertheless *some* practical reasons are justifying but not motivating. How can that be?

The answer is that Kant holds that some *instrumental* practical reasons which would otherwise normally motivate our actions, can in fact fail to motivate our actions in some contexts in which the agent also has a *desire-overriding*, strictly universal, a priori, categorically normative, *non-instrumental* practical reason which both motivates her to action in those

36 See, e.g., Williams (1981).

contexts contrary to her selfish, egoistic or self interested,[37] hedonistic, or consequentialist inclinations, and also fully justifies her action in those contexts.

And this seemingly paradoxical situation, in turn, is in fact really possible and also sometimes actually real, because Kant holds an early version of *the hierarchical desire model of the will* later rediscovered by Harry Frankfurt, according to which effective first order desires, or first order volitions, always move us to action, but some second order desires (also known as "second order volitions") can sometimes not only determine just which effective first order desire or first order volition moves us, but also can either *de-rail* an occurrent first order desire which would otherwise have motivated the agent to action, or else *newly generate* an effective first order desire or first order volition that substitutes itself for an occurrent first order desire which would otherwise have motivated the agent to action. On this model, *Willkür* or the power of choice is the faculty of effective first order desires or first order volitions, and *Wille*, or practical reason (whether impure or pure) is the faculty of second order volitions. The power of choice or first order volition effectively desires ends or goals, and the satisfaction of desires produces pleasure or psychological happiness. Practical reason recognizes the objective values of these ends or goals. When practical reason recognizes ends as means for the production of happiness, it is *instrumental*. When practical reason responds to ends for their own sake, it is *non-instrumental*.

For Kant, the recognition of a *desire-overriding* non instrumental rea son depends on the objective value of the moral law or Categorical Im perative. But recognition of the Categorical Imperative also triggers an innate emotional disposition in rational human agents for having a high er order desire to achieve self transcendence with respect to their nar rowly selfish, egoistic or self interested, hedonic, or consequentialist in clinations, by desiring to be moved by unselfish or non egoistic, non hedonistic, non consequentialist effective first order desires. In other words, Kant defends *higher-order conative innatism* about motivation by

37 I distinguish between (i) selfish desires and (ii) egoistic or self interested desires. Someone's deep interest in promoting the welfare of the other members of his own family is egoistic or self interested, but not selfish. Conversely, someone's deep interest in gambling, even if it alienates all his friends, destroys his mar riage, and gets him fired from his job, is selfish but not egoistic or self interest ed.

non instrumental reasons. Sometimes this innately generated higher order desire for self transcendence is in fact evil or immoral, as in the case in which someone continues to loot during a natural disaster even though he knows that he is very likely to be shot on sight. But sometimes namely, when it results from recognition of the Categori cal Imperative this innately generated higher order desire for self tran scendence is moral. That moral self transcendence rarely happens in human affairs is fully acknowledged by Kant. But it *is* possible, and, Kant firmly believed, sometimes actually really happens.

If I am right, then the Humean and Kantian accounts of practical agency are much closer both in detail and spirit than has previously been thought. But the crucial difference between them is Kant's idea that the motivational force of a practical reason can be based exclusively on an innate emotional disposition for having higher order desires to be moved by morally appropriate non selfish, non egoistic or non self in terested, non hedonistic, non consequentialist first order desires. This innate emotional disposition, which Kant calls the capacity for "respect" or *Achtung*, is causally triggered by a person's subjective experience or consciousness of recognizing of the Categorical Imperative as a de sire overriding, strictly universal, a priori, categorically normative, non instrumental practical reason. This subjective experience or con sciousness of recognizing the Categorical Imperative, in turn, is what Kant calls "the Fact of Reason" (*Faktum der Vernunft*) (*CPrR* 5:31).

In order to develop and defend this interpretation of Kant's theory of practical agency, I want to look more closely at Kant's rational tele ology, i. e., his theory of practical ends or purposes, and also at his cor responding theory of the internal structure and operations of the human will. Here are the relevant texts.

> The will is a capacity to determine itself to acting in conformity with the *representation of certain laws*. And such a capacity can be found only in ration al beings. Now, what serves the will as the objective ground of its self de termination is an end, and this, if it is given by reason alone, must hold equally for all rational beings. What, on the other hand, contains merely the ground of the possibility of an action the effect of which is an end is called a *means*. The subjective ground of desire is an *incentive*; the objective ground of volition is a *motive*; hence the distinction between subjective ends, which rest on incentives, and objective ends, which rest on motives, which hold for every rational being. Practical principles are *formal* if they abstract from all subjective ends, whereas they are *material* if they have put these, and consequently certain motives, at their basis. The ends that a rational being proposes at his discretion as *effects* of his actions (material

ends) are all only relative; for only their mere relation to a specially consti tuted faculty of desire on the part of the subject gives them their worth, which can therefore furnish no universal principles, no principles valid and necessary for all rational beings and also for every volition, that is, no practical laws. Hence all these relative ends are only the ground of hy pothetical imperatives. But suppose that there were something the *existence of which in itself* could be a ground of determinate laws; then in it, and in it alone, would lie the ground of a possible categorical imperative, that is, of a practical law [...]. Beings the existence of which rest on our will but on nature, if they are beings without reason, still have only relative worth, as means, and are therefore called *things*, whereas rational beings are called *persons* because their nature already marks them out as an end in itself, that is, as something that may not be used merely as a means, and hence so far limits the all choice (and is an object of respect). These, therefore, are not merely subjective ends, the existence of which as an effect of our action has a worth *for us*, but rather *objective ends*, that is, beings the existence of which is in itself an end, and indeed one such that no other end, to which they would serve *merely* as a means, can be put in its place, since without it noth ing of *absolute worth* would be found anywhere; but if all worth were con ditional and therefore contingent, then no supreme practical principle for reason could be found anywhere. (*GMM* 4:427–428).

In the kingdom of ends everything has either a *price* or a *dignity*. What has a price can be replaced by something else as its *equivalent*; what on the other hand is raised above all price and therefore admits of no equivalent has a dignity. What is related to general human inclinations and needs has a *market price*; that which, without presupposing a need, conforms with a certain taste, that is, with a delight in the mere purposeless play of our mental powers, has a *fancy price*; but that which constitutes the condi tion under which alone something can be an end in itself has not merely a relative worth, that is, a price, but an inner worth, that is, a *dignity*. (*GMM* 4:434–435).

All material practical principles put the determining ground of the will in the *lower faculty of desire*, and were there no *merely formal* laws of the will sufficient to determine it, then neither could *any higher faculty of desire* be admitted [...]. The principle of one's own happiness, however much un derstanding and reason may be used in it, still contains no determining ground for the will other than such as is suitable to the *lower* faculty of desire [...]. Then, only insofar as reason of itself (not in the service of the incli nations) determines the will, is reason a true *higher* faculty of desire, to which the pathologically determinable is subordinate, and then only is rea son really, and indeed *specifically*, distinct from the latter, so that even the least admixture of the latter's impulses infringes upon its strength and supe riority. (*CPrR* 5:22, 24–25).

CONCERNING THE PROPENSITY TO EVIL IN HUMAN NA TURE. By *propensity* [...] I mean the subjective ground of the possibility of an inclination (habitual desire, *concupiscentia*), insofar as this possibility is contingent for humanity in general. It is distinguished from predisposition

> in that such a propensity can indeed be innate yet *may* be represented as not being such: it can rather be thought of (if it is good) as *acquired*, or (if evil) as *brought* by the human being *upon* himself.—Here, however, we are only talking of a propensity to genuine evil, i.e., moral evil, which, since it is only possible as the determination of a free power of choice and this power for its part can be judged good or evil only on the basis of its max ims, must reside in the subjective ground of the possibility of the deviation of the maxims from the moral law. And, if it is legitimate to assume that this propensity belongs to the human being universally (and hence to the character of the species), the propensity will be called a *natural* propensity of the human being to evil.—We can further add that the power of choice's capacity or incapacity arising from this natural propensity to adopt or not to adopt the moral law in its maxims can be called *the good or evil heart*. (*Rel* 6:29).
>
> The capacity for desiring in accordance with concepts, insofar as the ground determining it to action lies within itself and not in its object, is called the capacity for *doing or refraining from doing as one pleases*. Insofar as it is joined with one's consciousness of the capacity to bring about one's object by one's action it is called *the capacity for choice* (*Willkür*); if it is not joined with this consciousness its act is called a *wish*. The capacity for desire whose inner determining ground, hence even what pleases it, lies within the subject's reason, is called the *will* (*Wille*). The will is there fore the capacity for desire considered not so much in relation to action (as the capacity for choice is) but rather in relation to the ground determining choice to action. The will, strictly speaking, has no determining ground; insofar as it can determine the capacity for choice, it is instead practical rea son itself. Insofar as reason can determine the capacity for desire in general, not only *choice* but mere *wish* can be included under the will. The choice which can be determined by *pure reason* is called free choice. That which can be determined only by *inclination* (sensible impulse, *stimulus*) would be animal choice (*arbitrium brutum*). Human choice, however, is a capacity for choice that can indeed be *affected* but not *determined* by impulses, and is therefore of itself (apart from an acquired aptitude of reason) not pure but still can be determined to action by pure will. *Freedom* of choice is this in dependence from being *determined* by sensible impulses; this is the negative concept of freedom. The positive concept of freedom is that of the capacity of pure reason to be itself practical. But this is not possible except by the subjection of the maxim of every action to the condition of its qualifying as universal law. (*MM* 6:213–214).

According to Kant, then, desires are always aimed at ends. Objective ends are intrinsic values, and provide *motives* for action. Subjective ends are the pleasurable satisfactions of desires and the removal (or any how the control) of painful frustrations of desires, and provide *incentives* for action. Means are things valued only for the sake of ends, hence are only extrinsic values. Objective ends can have either a *price* or a *dignity*.

For an end to have a price means that it has some equivalent which can be substituted for it. Price can either be *market* price (in terms of satis faction of interests) or *fancy* price (in terms of disinterested satisfaction). Dignity is *absolute intrinsic value*, which is beyond all price. Only ends in themselves, or persons, have dignity.

Here, in turn, is Kant's basic theory of the will. The human will, or *faculty of desire* (*Begehrungsvermögen*), is our innate capacity for mobilizing and organizing our desires in order to motivate or move ourselves to choosing or doing, and in human persons the will is a rational human agent's power of wanting, intending, deliberating, deciding, and trying. In turn, the human will or the faculty of desire has two levels:

(1) the lower or executive faculty of effective first order desires or first order volitions, *the power of choice* (*Willkür*),

and

(2) the higher or legislative faculty of second order volitions, the will (*Wille*), *or the faculty of practical reason*.

So the faculty of practical reason is a necessary proper part of the human will or faculty of desire. Hence the faculty of practical reason is the will in the *proper* or rational sense. Now the lower faculty of desire or the power of choice is normally motivated or moved by objective ends that are picked out by our selfish, egoistic or self interested, hedonistic, or consequentialist desires, and constitute the "matter" of our happiness, which is the pleasurable satisfaction of desires and the removal (or any how the control) of their painful frustration. Insofar as the faculty of practical reason is concerned with these ends, it is an "impure" and *instrumental* reason. This is the lower faculty of practical reason. But it is also possible for the faculty of practical reason to be *pure* and *non-instrumental*, and therefore to be moved not by the matter of our happiness, but rather solely by *the form of law-giving*, i. e., by the structure of person hood or free agency itself, our essential nature as rational animal agents, considered as an objective but purely formal end. This is the higher fac ulty of practical reason. The law which is given by persons or free agents to themselves is the moral law or Categorical Imperative, hence higher willing of this type is positive freedom or autonomy.

So, to summarize, according to Kant the overall structure of the human will or faculty of desire looks like this:

Human Will or Faculty of Desire (*Begehrungsvermögen):*
higher part = **faculty of practical reason or will proper** (*Wille):*
higher part = ***pure or non-instrumental reason***
lower part = ***impure or instrumental reason***
lower part = **power of choice** (*Willkür)*

More precisely now, according to Kant, *Willkür* or the power of choice is an *executive* first order volitional power of intentional causation by means of effective first order desires, that is, first order desires that do or will or would move us all the way to action.[38] By contrast *Wille* or the will is a higher order volitional power of *self-legislation*, which operates by means of recognizing either instrumental or non instrumental reasons for the determination of choice. To act on the basis of *Willkür* is to move our animal bodies by means of our effective first order desires or first order volition. This can of course occur in a Humean way by means of instrumental reasoning according to the hypothetical imperative. Since instrumental reasoning is itself a form of self legislation, it involves what we can call the "impure" *Wille*.

To act on the basis of the "pure" *Wille* or pure practical reason, however, is to constrain and determine our *Willkür* by recognizing the Categorical Imperative, which, as recognized, provides a desire overriding, strictly universal, a priori, non instrumental reason for action, and thereby causally triggers an innate higher order emotional disposition in all human persons (also known as *respect* or *Achtung*) to desire to be moved by morally appropriate and non selfish, non egoistic or non self interested, non hedonistic, non consequentialist effective first order desires:

> The direct determination of the will by the law, and the awareness of that determination, is called "respect," so we should see respect as the *effect* of the law on a person rather than as what *produces* the law. Actually, respect is the thought of something of such worth that it breaches my self love […]. Any moral so called *interest* consists solely in *respect* for the [moral] law. (*GMM* 4:402 n.).

So to act on the basis of pure *Wille* is to do the right thing as determined by our own pure practical reason, via the unique motivational influence of the innate dispositional higher order emotion of respect on our effective first order desires or choices, no matter what the external and psychological antecedents, no matter how much pain I might suffer by doing the right thing, and no matter what the consequences.

38 See Frankfurt (1988, 14).

The crucial factor in this account is Kant's idea that there exists an innate emotional disposition in all rational human agents to have a higher order desire to be moved by non selfish, non egoistic or non self interested, non hedonistic, non consequentialist effective first order desires or choices. As I mentioned above, I call this special higher order desire *the desire for self-transcendence* because it is a desire to achieve a radical volitional distancing with respect to our own selfish, egoistic or self interested, hedonistic, or consequentialist first order desires, and thus to be able to overcome the almost irresistible centripetal forces of the Dear Self and the Bottom Line. Non selfish, non egoistic or non self interested, non hedonistic, non consequentialist first order desires take the following general form:

> I want (not) *X*, no matter how much pain I may experience in getting (not) *X* and whatever the consequences.

So, correspondingly, the desire for self transcendence takes the following general form:

> I want (not) to want (not) *X*, no matter how much pain I may experience in getting (not) *X* and whatever the consequences.

But here is a further key point about this crucial factor. Sometimes the desire for self transcendence is *evil* or *immoral*, as in the case in which someone continues to loot during a natural disaster, thereby directly contributing to social chaos, even though he knows that he is very likely to be shot on sight. In such a case, the intrinsic value, or objective end, that triggers the higher order desire for self transcendence is the fact that the looter prefers the destruction of the world, including of course the possibly extremely painful destruction of himself, to his continued non possession of, say, an iPod or a Lexus SUV. So he wants that iPod or Lexus SUV *no matter how much pain he may experience in getting that iPod or Lexus SUV and whatever the consequences*.

This is of course highly perverse and wicked, and an excellent example of what Kant calls "radical evil" (*Rel* 6:19 53). Radical evil minimally implies our ability to act with *transcendental freedom* of the will, but also selfishly, egoistically or self interestedly, hedonistically, consequentialistically, and wrongly, hence without occurrent *practical freedom* of the will or autonomy although of course it must also be added that both the capacity for and also the occurrent realization of transcendental freedom entail our possession of the *capacity* for practical freedom (*CPR* A533 534/B561 562). But radical evil also implies our ability to act

freely on the basis of innately generated, highly perverse and wicked, but *non* selfish, *non* egoistic or *non*-self interested, *non* hedonistic, or *non* consequentialist desires. It is possible to want a thing that is also very bad for you, no matter how much pain you experience in getting it, and no matter what happens to you or anyone else as a consequence of your actions. So you want *that bad thing for its own sake*, or literally *for the hell of it*.

In this way, just like Hume, Kant does not regard it as contrary to reason for me to prefer the destruction of the world (including my own self destruction) to the scratching of my finger.[39] Only a rational human agent or human person could ever *have* such a self transcending desire. Indeed, on Kant's account of desire, *no* desires had by human persons could ever be essentially irrational or arational, since the function of a desire is just to move a rational human agent to action in the service of attaining rationally recognized objectively intrinsically valuable in strumental or non instrumental ends whether these are *material* ends, in the case of empirical desires based on pleasure and pain, or *formal* ends, in the case of moral emotion of respect (*CPrR* 5:21 28). But some non egoistic desires are more rational than others, and some are immoral. So for Kant it would be superlatively immoral for me to prefer the destruction of the world (including my own self destruction) to the scratching of my finger, precisely because this would be a radical viola tion of the Formula of Humanity as an End in Itself version of the Cat egorical Imperative: "So act that you use humanity, whether in your own person or in the person of any other, always at the same time as an end, never merely as a means." (*GMM* 4:429). I would thereby be treating everyone in the world (including myself) as *mere things and mere means to my own ends*, and worth less than my momentary mild pain.

Sometimes however namely, when it results from recognition of the Categorical Imperative the desire for self transcendence is moral. That moral self transcendence rarely happens in human affairs is fully acknowledged by Kant: "Out of the crooked timber of humanity, nothing straight can ever be made." (*IUH* 8:23) But, Kant firmly be lieved, it *is* possible. In support of this, he provides a famous thought experiment of a very lustful person who (unlike the perversely immoral and self transcending Humean person who prefers the destruction of the world, including his own self destruction, to the scratching of his fin ger) would never in fact gratify his lust and thereby commit a crime

39 See Hume (1978, book II, part III, section iii, 416).

for any *instrumental reason*, if at the moment of committing his crime he were presented with the gallows from which he would be instantly strung up as punishment. But this very same very lustful person never theless regards it as fully possible for him to lay down his own life on the very same gallows by refusing to give false testimony against an hono rable man, even though he were commanded to do on pain of death by a tyrannical prince, and thus he conceives it to be fully possible for him to choose and act on the basis of a moral *non-instrumental reason* (*CPrR* 5:30).

But *how* is this fully possible, even for a very lustful person? The quick Kantian answer is that sometimes it *actually really happens*. So ac cording to Kant it is a *fact*, although of course a unique sort of fact, namely a *non-empirical* fact. More precisely, however, this unique non empirical fact is the fact that our subjective experience or con sciousness of recognizing the Categorical Imperative triggers our innate higher order emotional disposition for feeling respect, and then respect generates the higher order desire for moral self transcendence. So it is a non empirical fact, but also an inherently *affective or non-cognitive* fact. The subjective experience or consciousness of our recognition of the moral law, together with its higher order emotive causal generative ef fects, is nothing more and nothing less than *the Fact of Reason:*

> The consciousness of this fundamental law [of pure practical reason, which says: so act that the maxim of your will could always hold at the same time as a principle of universal law giving] may be called a fact of reason, since one cannot ferret it out from antecedent data of reason, *such as the conscious ness of freedom* (for this is not antecedently given), and since it forces itself upon us as a synthetic proposition a priori based on no pure or empirical intuition [...]. In order to regard this law without any misinterpretation as given, one must note that it is not an empirical fact, but the sole fact of pure reason, which by it proclaims itself as originating law. (*CPrR* 5:31).

It is crucial to note, again, that the Fact of Reason is *not* a cognitive or intellectual psychological fact, but instead an inherently affective or non cognitive psychological fact about how the moral emotion of re spect operates on the hierarchical desire structure of our wills. The Fact of Reason is thus *the Affect of Reason*. Like all rational facts, it is ab solutely spontaneously active. But in this case, it is absolutely spontane ously active insofar as it is *absolutely spontaneously responsive or passionate* In other words, it is a rational act of *the heart*, not a rational act of *the head*. In this respect, Kant's view is strikingly like that of Pascal, who rightly

said that the heart has own reasons of its own that reason knows nothing about.[40] Kant's fact of reason is the rational act of *moral wholeheartedness*.

Precisely what sort of morally wholehearted rational act are we talk ing about here? The answer, I think, is that in feeling respect for persons and for the Categorical Imperative within them and within ourselves, we want to want to be moved i.e., we desire to have effective first order desires such that we choose and act non selfishly, non egoisti cally, non hedonistically, and non consequentialistically, hence non in strumentally, so that our choosing or doing has genuine *moral worth* (i.e., absolute intrinsic value) and not merely *moral value* (either relative intrinsic value or extrinsic value). Or in other words, the Fact of Reason expresses a choosing or doing that is *inherently motivated by respect* a choosing or doing that is inherently moved by an absolutely spontane ously responsive or passionate moral purity of the heart.

For example, someone raises her arm and shrieks in order to stop a street crime, or perhaps becomes a whistleblower in a corporate organ ization, just because she feels in her heart and mind that it is the morally right thing to do, even though she thereby risks her own life (in the case of stopping the street crime), or even though she risks losing her job and all her co worker friends (in the case of the corporate whistleblower), and even though she desperately wants to avoid getting involved. It seems clear that given these background conditions, only a second order volition driven by the innate emotional capacity for respect could motivate such acts. Therefore she is doing her duty. According to Kant, "duty is the necessity of an action [done] from respect for the moral law" (*GMM* 4:400). This says that duty is the obligation that is binding on any act that is such that *only* the feeling of respect will suffice to move us *no matter what* our first order desires might hap pen to be.

In turn, there seem to be two different ways in which the feeling of respect can move us by way of the second order volition of the desire for moral self transcendence.

According to the first way, the higher order desire for moral self transcendence can take a particular online selfish, egoistic, hedonistic, or merely consequentialistic would be effective first order desire off line, and substitute a morally appropriate *pre-existing or latent* (but as yet non effective) non selfish, non egoistic, non hedonistic, non con sequentialistic (hence non instrumental) first order desire in its place,

40 Pascal (1966, section 4, #277).

so that it becomes the effective one. To borrow Kant's example, the very lustful person can take offline his intense online first order desire to avoid being hanged, and then substitute a pre existing or latent first order desire to avoid bearing false witness against an honorable man, so that this latter desire now becomes his first order volition.

And according to the second way, assuming a total set of selfish, egoistic, hedonistic, or consequentialist (hence instrumental) online first order desires, together with another total set of non selfish, non egoistic, non hedonistic, or non consequentialist (hence non instru mental) first order desires, from which none has yet emerged as a would be *effective* first order desire, the higher order desire for moral self transcendence can re organize the emotional constituents of that state so as to produce a *new* online non selfish, non egoistic, non he donistic, or non consequentialist (hence non instrumental) effective first order desire that is also morally appropriate. To borrow another of Kant's examples, a person who is by nature somewhat cold and un sympathetic towards other people, and furthermore has many troubles of his own, can nevertheless generate a new effective first order desire to be kind to someone else (*GMM* 4:398 399). This sort of emotion ally generative absolute spontaneity is strictly analogous to the *cognitively* generative absolute spontaneity that yields pure a priori knowledge.[41]

We should not assume, however, that the deeply motivational, de sire overriding, innate emotional disposition for feeling respect will al ways have the same phenomenology. It may manifest itself as a feeling of guilt, of sympathy, or empathy, of self righteousness, or even of self loathing. As Kant points out, since it "breaches my self love," the sub jective experience of respect is often extremely unpleasant. It is *not* en joyable to thwart one's own powerful selfish, egoistic or self interested, hedonistic, or consequentialist first order desires. Freudians would call it *repression*. In reply to the Freudians, Kant could say: 'Yes, I agree com pletely that it is repression, and that repression is not a happy experience. But precisely because we are crooked timbers and radically evil, a certain amount of repression is just the psychic cost of moral virtue.' Or some what more cynically put: *no good deed ever goes unpunished*.

Nevertheless, there *is* an important psychic upside here, over against the psychic downside of repression. A transcendentally free and rational human agent i.e., a conscious, self conscious and self reflective human agent, capable of theoretical and logical a priori cognition,

41 See Hanna (2006b, ch. 7).

who also has the innate capacity for being motivated or moved by respect may sometimes be, but does not ever *have* to be, helplessly manipulated, overwhelmed, or violated by her own desires. This is because the innate emotional disposition for feeling respect essentially affectively expresses *her deepest self*. If she is ever truly motivated or moved by respect, even if it requires a terrible struggle, then ultimately *she has the will that she wants*. She has realized the capacity for rational emotional control of her own conscious, affective, and practical life. The internal constitution of the person she is and the person she will become are then both ultimately *up to her*. She is therefore both transcendentally free and *also* practically free or autonomous. Kant calls the subjective experience or consciousness of this special sort of self control "self fulfillment" or *Selbstzufriedenheit*:

> Have we not, however, a word that does not denote enjoyment, as the word happiness does, but that nevertheless indicates a satisfaction with one's existence, an analogue of happiness that must necessarily accompany consciousness of virtue? Yes! This word is *self fulfillment*, which in its strict meaning always designates only a negative satisfaction with one's existence, in which one is conscious of needing nothing. Freedom, and the consciousness of freedom as an ability to follow the moral law with an unyielding disposition, is *independence from the inclinations*, at least as motives determining (if not as *affecting*) our desire, and so far as I am conscious of this freedom in following my moral maxims, it is the sole source of an unchangeable fulfillment, necessarily combined with it. (*CPrR* 5:117).

Such a state of rational volitional self fulfillment is a higher order kind of happiness that is *analogous* to ordinary or first order happiness, but *deeper* than ordinary or first order happiness. It is Kant's anticipation of what the Existentialists later called "authenticity" or *Eigentlichkeit*, and what Frankfurt calls the "decisive identification" of second order volitions with effective first order desires or first order volitions.[42] Whatever we call it, I do think it is a variety of free will most definitely worth having.

The doctrine of *Selbstzufriedenheit*, in turn, highlights the basic way in which Kant's theory of free will transcends Hume's theory of practical agency. For Kant, unlike Hume, practical reason is not the *slave* of the passions.[43] But this does not imply that for Kant practical reason is not intrinsically connected to our desires, drives, emotions, and feelings, and thus not intrinsically connected to our passions. On the contrary,

42 Frankfurt (1988, 21).

43 Cf. Hume (1978, book II, part III, section iii, 415).

for Kant practical reason *is* intrinsically connected to our passions. The passions are the *engines* of pure practical reason. Via our faculty for prac tical reason, we consciously recognize the relative or absolute objective intrinsic values of ends, and at the very same time and in the same re spect, our desires, drives, emotions, and feelings subjectively propel us towards those ends by whatever means it rationally takes to get us there.

So curiously enough, and in defiance of the standard construal of the Internalism vs. Externalism opposition which puts Hume's theory or practical agency, as the supposed paradigm of Internalism, in diamet ric and exhaustive opposition to Kant's theory of practical agency, as the supposed paradigm of Externalism Kant is in fact a unique kind of *in- ternalist* about practical reasons, who thinks that all reasons are both jus tifying on the basis of objective intrinsic values or ends, and also moti vating on the basis of either lower order or higher order desires, some of which are innately generated. The Categorical Imperative is both *felt* and *known* by means of our faculty of practical reason, which is the same as the faculty of *desire*. In this sense, Kant's theory of practical reasons is perfectly continuous with Hume's theory of internal reasons, although to be sure Kant's theory also recognizes a special class of *desire-overriding*, strictly universal, a priori, categorically normative, *non-instrumental* inter nal practical reasons that Hume's theory does not recognize.[44]

Otherwise put, for Kant the passions are *also* inherently purely ra tional, in that persons inherently can (even if they rarely actually do) mobilize and control their selfish, egoistic or self interested, hedonistic, or consequentialist first order desires by means of special, intentional act directed second order desires, or second order volitions, absolutely spontaneously generated by the innate emotion of respect for the Cat egorical Imperative or moral law and the dignity of persons. And if we are very lucky, we can also thereby be happy and realize some part of the complete good. According to Kant *the complete good*, or the best life for a human person, is a rational human life of perfect individual and social happiness that is intrinsically controlled by a good will, which is the highest or *supreme* good (*GMM* 4:396; *CPrR* 5:110 111). And as we have seen, acting with a good will carries its own high er happiness or self fulfillment, and consists in the subjective experience or consciousness of the perfect coherence of all one's own desires, emo tions, beliefs, cognitions, inferences, intentions, motivating reasons, choices, and acts in the realization of practical freedom or autonomous

44 See also Hanna and Maiese (2009, ch.3).

willing. In short, moral self fulfillment is *moral authenticity* or *integrity*. Every time an agent truly acts for the sake of the moral law she realizes *moral worth*, and thereby experiences autonomous self fulfillment. But if she *also* thereby achieves some personal or socially shared ordinary happiness, then she *also* realizes a proper part of the complete good. Thus Kant's ethics has *two* fundamental values or highest goods: the Supreme Good (the good will), and the Complete Good (perfect human happiness controlled by a good will). The relation between the supreme good and the complete good is essentialist and mereological: an autonomous human person's good will is the governing structure (or "essential form") of the stuffing (or "prime matter") that is perfect human happiness, and the whole that is jointly constituted by them is the Complete Good.

Kant is thus a defender of *strict deontological non-consequentialist romantic eudaemonism* in ethics. In this respect, as in so many others, Kant's ethics captures what is most defensible and true in Aristotle's ethics and Hume's ethics alike, without collapsing into either virtue ethics or consequentialism.

4. Conclusion

If Kant's Biological Theory of Transcendental Freedom and his Post-Compatibilism are correct, then rational human animals or real human persons possess the kind of metaphysically robust freedom of the will — deep freedom, ultimate sourcehood, or up-to-me-ness — that fully supports moral responsibility in particular but also fully supports a rich conception of practical agency more generally, without being subject to either horn of the seemingly exhaustive and logically destructive dilemma of Compatibilism vs. Incompatibilism.

If Kant's theory of practical agency is also correct, then the Complete Good for human persons is getting what we most deeply want in a way that is controlled by the Supreme Good, i.e., a good will. More precisely, this can happen when our non-instrumental pure practical reason, via transcendentally free and autonomous good willing, also rationally fulfills our deepest selves — i.e., our transcendentally free, practically free, and autonomous selves — by means of the non-selfish, non-egoistic or non-self-interested, non-hedonistic, non-consequentialist innate dispositional emotion of respect that absolutely spontaneously affectively generates the higher order desire for moral self-transcen-

dence. So the Categorical Imperative is a desire overriding, strictly uni versal, a priori, categorically normative, non instrumental *motivating* and justifying reason, precisely because the faculty of pure practical reason inherently includes the capacity for *moral wholeheartedness*. The passions are, and only ought to be, the engines of pure practical reason.[45]

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45 Earlier versions of various parts of this material were presented to the Transcen dental Philosophy and Naturalism Workshop at University of Essex, UK in November 2005, to the Philosophy Faculty at Oxford University, UK in Jan uary 2006, to the Faculty of Philosophy at Cambridge University, UK in March 2006, and to the Rocky Mountain Ethics Conference, Boulder CO in August 2008. I am grateful to the members of those audiences for their help ful comments. Many thanks also to Bryan Hall for his critical comments on an earlier draft of the essay.

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Kritik der Urteilskraft §§76–77: Reflective Judgment and the Limits of Transcendental Philosophy

Angelica Nuzzo

Abstract

This essay reconstructs the argument of *Kritik der Urteilskraft §§76–77* by placing it in the context of the "Critique of Teleological Judgment". What role does the problematic and historically so successful figure of the intuitive understanding play in the antinomy of teleological judgment? The answer is considered indispensable to address the issue of the reception of §§76–77. The claim is that these sections institute the "closure" of transcendental philosophy—a closure fundamentally misunderstood by the post Kantians. On the series of distinctions drawn to characterize the "peculiarity" of our human understanding and, by contrast, that of a non human mind hinges the specific *transcendental* character of Kant's philosophy. Once the condition that sustains those distinctions is abandoned transcendental philosophy is abandoned as well.

Introduction

If we were to reconstruct Kant's philosophy from the history of its reception, we would be confronted with an interesting scenario. For such history is marked by the all absorbing focus on particular theses that at different moments epitomize the promise or, alternatively, the flaws of Kant's thought.[1] The immediate reception of §§76 77 of the *Critique of*

1 To mention only a few scattered examples, this is the case, with regard to the first *Critique*, with the distinction between appearance and thing in itself in the early reception of this work, or with the themes of the "common root" of our cognitive faculties and the idea of the transcendental imagination brought to the foreground by Heidegger's Kant interpretation—an interpretation that has influenced the reading of Kant's philosophy up to contemporary Anglo American continental discussions. This is also the case with the transcendental deduction and the unity of apperception, which still constitute a privileged perspective in the analytically oriented reading of Kant. With regard to the second *Cri*

Judgment (*CJ*) is one of the first, paradigmatic cases in point. Among the many themes that the third *Critique* attempts to unify, these two sections have catalyzed the interest of contemporary readers from Goethe to Schiller, from Fichte and Schelling to Hegel like no others, sparking enthusiasms and high praise, and working as the benchmark on which to measure the disappointment with other results of transcendental philosophy and hence the need to overcome its presuppositions. However, insofar as §§76–77 are unanimously viewed as the springboard for post-Kantian philosophy, they are detached from their textual context and considered an almost autonomous treatise on the topic of the "intuitive understanding."

The question of why so much has immediately been made of these sections has variously occupied Kant interpreters as well as historians of the transition leading from Kant to German Idealism.[2] After all, in the development of Kant's argument §76 appears simply as a "Remark" on the previous discussion of the concept nature's purposiveness, whereas §77 restricts such principle to our human understanding on the basis of its "peculiarity" – a restriction that, for all its importance, is found restated often enough throughout the work. There are, to be sure, different ways to approach the question of why these sections uniquely struck the philosophical imagination of many contemporary readers. What did the post-Kantians see in them and what were they actually looking for?[3] What were their philosophical assumptions and programmatic aims in such a reading? To which extent were they faithful to the spirit (if not the letter) of Kant's philosophy?[4]

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tique, significant is the focus on the idea of "respect" as unique moral feeling that the phenomenological tradition (from Ricoeur to Lingis) has taken as an antidote to Kant's often criticized formalism. This is finally the case with the insistence on the notion of "genius" bent in the direction of its Romantic appropriations, and in Arendt's aftermath with the importance attributed to judgment and to the link between judgment and the political in the third *Critique*. As much as these examples are relevant because they signal central themes in Kant's thought they are even more relevant because they reveal the particular intellectual climate and the broader philosophical interests within which the reception and appropriation of Kant's work takes place at particular historical junctures. A more extensive and systematic discussion can be found in Nuzzo (2008).

2 To give only an example of the most recent literature, see Düsing (1983), Förster (2002), Gram (1981), Longuenesse (2007, 233–234), Verra (1981).

3 See Franks/Gardner (2002).

4 See Gram (1981).

In this essay I am not concerned with these questions directly. My focus is, at the same time, narrower and broader. Although the reception of §§76 77 implicitly frames my argument (Hegel's reading in particular), an immanent reconstruction of Kant's position remains my main objective. Even in the most careful interpretations of these sections the interest in their reception overshadows their function within Kant's argument in the "Critique of Teleological Judgment." By contrast, I pursue an analysis of these texts insisting on their role within the Dialectic of reflective judgment. My claim is that §§76 77 are *not* an independent treatise on the intuitive understanding. While Kant mentions the possibility of thinking of an intuition and an understanding unlike our human sensible intuition and our discursive understanding in other works and in other thematic connections,[5] in §§76 77 he addresses the topic with a particular, indeed a conclusive aim. Such an aim is dictated both by the argument of the Dialectic of teleological judgment and by the conclusive position that the 1790 work occupies in Kant's critical project. Hence my two main questions: what prompts Kant to raise the issue of the intuitive understanding at this juncture? What role does this problematic and historically so successful figure play in the antinomy of teleological judgment? I consider the answer to these questions narrower in focus and internal to Kant's argument indispensable to address the broader issue of the post Kantian reception of §§76 77.

Even in tackling this latter issue, however, my attention remains focused on Kant's investigation. My claim is that on the series of distinctions that Kant draws in §§76 77 to characterize the "peculiarity" of our human understanding and, by contrast, that of a non human mind hinges the specific *transcendental* character of his philosophy. Once the condition that sustains those distinctions is abandoned or even just slightly modified transcendental philosophy is abandoned as well. Arguably, this is the fundamental step undertaken more or less explicitly by all post Kantians. Fichte's brand of transcendental philosophy is utterly un Kantian,[6] Schelling's and in a different way Goethe's philosophy of nature revert to a specific kind of metaphysics, while Hegel's dialectic speculative philosophy leaves Kant's critical enterprise behind. I suggest that §§76 77 show that the transcendental

5 See for example the discussion in Gram (1981) and Garrett (1937) for the 1770 *Dissertatio*.

6 It is indeed disputable that is it transcendental at all (at least in Kant's sense).

framework is, for Kant, closed. The function of the *Critique of Judgment* is to produce such closure. Indeed, the post Kantians were aware of the crucial significance of these sections for the critical project. Nonetheless, they fundamentally missed the closed character of the paradigm of Kant's transcendental philosophy. They picked on the doctrine present ed in these sections as the point from which to work, alternatively, on the correction, improvement, or completion of Kant's thought. They did not see that §§76 77 contain the opposite lesson, namely, the claim that if one of the conditions that constitute the "peculiarity" of our human understanding is modified, the transcendental framework is abandoned once and for all. §§76 77 prove that Kant's transcendental philosophy is already completed, and that it cannot be corrected without inaugurating an utterly different paradigm. To be sure, on some of the contemporary readings the claim is that herein Kant is already out of the limits prescribed by transcendental philosophy. Hence my central ques tion: does the idea of the intuitive understanding still belong to tran scendental philosophy albeit in a merely negative way?[7]

In the first part of this essay, I place §§76 77 within the Dialectic of teleological judgment showing how the issue of the "peculiarity" of the human understanding is already entailed in the presentation of the an tinomy. In the second part, I analyze these sections to support the claim that the idea of the intuitive understanding still belongs to tran scendental philosophy.

1. §§76 77 within the Dialectic of Teleological Judgment

1.1. Transcendental Philosophy and the Limits of the Human Cognitive Faculty

§§76 77 belong to the conclusive part of the Dialectic of teleological judgment.[8] Its "antinomy" is first presented as proper to *reflective* judg ment (in opposition to determinant judgment)[9] and then solved by

7 See *CJ*, §77, 347 (AA 5:406): "negativ, nämlich bloß nicht diskursiven [Ver stand]."Or, to re frame this question in terms of the argument leading up to the solution of the antinomy: what is the relation between §§72–73 in which Kant declares the failure of all dogmatic systems to account for our tel eological explanations of nature and §§76–77? With this question, I advance a reflection that I started in Nuzzo (2005, 340–353).

8 *CJ*, §§69–78.

turning to the *critical* and *transcendental* (as opposed to the dogmatic and metaphysical) character of the concept of nature's purposiveness.[10] Al ready in the formulation of the antinomy at stake is the difference be tween the constitutive principle of determinant judgment and the reg ulative maxim of reflective judgment. §76 follows the discussion of the antinomy; its heading (simply titled "Remark") does not promise any additional argument.[11] §77, on the other hand, expands on the sugges tions of §76, and concentrating on the "peculiarity" of our human un derstanding to which we owe the concept of natural purpose, launches on the famous discussion of the intuitive understanding.

My contention is that in presenting the antinomy as a necessary part of the critique of teleological judgment Kant establishes the most dis tinctive features of transcendental philosophy by marking the farthest limits to which its investigation can extend. The "peculiarity" of our human understanding, central in §§76 77, is already explicitly con tained in the presentation of the antinomy.[12] Within its framework and on the basis of its relevance for Kant's critical project, §§76 77 generalize the specific features proper to the transcendental perspec tive.[13] It is no accident that the solution of the antinomy, possible only within transcendental philosophy, follows Kant's presentation of the failure of *all* dogmatic systems to address the problem at issue there by gaining an additional historical conclusiveness.[14] Kant's point is not only that the *critical solution* is systematically and historically the only possible solution. The point is that the critical formulation is also the only plausible one it is the only formulation that does indeed re gard the *faculty of judgment* and does not lead philosophy astray in its in vestigation of nature. Herein lies both the conclusiveness and the "clo sure" of transcendental philosophy.

In the second part of the third *Critique*, the "natural dialectic" be longs exclusively to the faculty of judgment as investigated within the critical framework, namely, to reflective judgment. In it only within the transcendental perspective that reflective judgment can be thematiz

9 *CJ*, §§69–71.

10 See *CJ*, §75.

11 The section offers, Kant observes, an "*Erläuterung*" to what has been previously claimed, not a "*Beweis*" (*CJ*, §76, 339, AA 5:401).

12 See respectively, *CJ*, §70, 316 (AA 5:388) and §75, 333 (AA 5:398).

13 Kant opens the remarks of §76 underlying their importance in transcendental philosophy (*CJ*, §76, 339).

14 See *CJ*, §§72–73.

ed. At stake is, in the first place, the possibility of detecting a dialectic of the faculty of judgment. Ultimately, the intuitive understanding is an understanding for which no antinomy and no dialectic arise. Thus, the contrast between human and non human understanding, which is generally seen as the specific topic of §§76 77, is not proper to these sections alone but concerns the *entire dialectic*, nor does it exhaustively describe Kant's intention in these sections. Kant's fundamental problem is to indicate the type of thinking for which a true dialectic of the fac ulty of judgment obtains; or conversely, the question regards what it means for thinking to be antinomy free. Ultimately, however, at stake is a methodological problem. For Kant presents the issue as the confrontation of three ways of thinking: a transcendental investigation (to which we owe the first formulation of the antinomy), the entire spectrum of dogmatic systems (to which we owe the second formula tion), and the perspective of the intuitive understanding (for which no antinomy arise). It is in light of this discussion that I propose to read §§76 77.

Throughout the *Critiques*, Kant famously explores the realm of human experience its extension, limits, and inner articulation on the basis of the a priori conditions that characterize it as *human* experi ence. What counts as 'human' is neither determined metaphysically by reference to a presupposed human nature nor empirically by way of ob servation or by reference to anthropology and psychology. Within Kant's transcendental perspective, the sphere of the human is the expe riential domain encompassed by the legislation of a priori principles. These principles, in turn, are rooted in the activity of the mental facul ties subject to transcendental investigation. The limits of this domain are not preliminarily drawn; they *result* from the investigation itself. As Kant puts it in §76, "given the concept that we can form of the faculty of a finite rational being as such, all thinking must be like this and cannot be otherwise."[15] Task of each *Critique* is to prove the validity of the a priori principles proper to the respective cognitive faculties, namely, to show that and how such principles can be legitimately applied to or have re ality within appearances thereby generating a meaningful experience.[16] Kant makes this clear in a conclusive way at the beginning of the intro

15 *CJ*, §76, 339 (AA 5:401).

16 This is the case even in the second *Critique*. Here it is the problem of freedom's realization in the sensible world that leads up to the doctrine of the postulates and to the issue of the *Triebfeder* of practical reason.

duction of the *Critique of Judgment*.[17] The first part of this work inves tigates the possibility that an a priori principle of the faculty of judgment generate aesthetic experience, while in the second part the possibility of a distinctive cognitive experience of living, organic nature is at stake. This experience depends on the use of the concept of *Naturzweck*. The problem can be summed up as follows. While such concept is not an empirical concept, it can have validity within transcendental phi losophy if and only if it meaningfully refers to the realm of experience, that is, if it does not have an exclusively transcendent use. The concept of *Naturzweck* is "empirically conditioned, that is, possible only under particular conditions given in experience; and yet it cannot be obtained by abstracting from these conditions." Whereas it expresses a causality possible only as proper to reason, it is used in judging objects given in experience.[18] This peculiarity of the concept of *Naturzweck* to be a non empirical concept somehow referred to experience or, alterna tively, to be an a priori concept used in a non dogmatic way within na ture defines the terms of the antinomy of judgment.[19] What is the re lationship between this concept and our specifically human cognitive faculty? And how does such relationship play itself out in the formula tion of the antinomy of judgment? These are the questions that lead up to the argument of §§76 77.

In revisiting §§76 77 after the early appraisal of *Glauben und Wissen*, Hegel contends that the thought if inner teleology brought forth by Kant's concept of *Naturzweck* expresses the speculative unity of con cept and reality proper to the speculative idea. In such concept, he sug gests, we consider organisms "in the way of the intuitive understand ing."[20] Which is to say, in the concept of *Naturzweck* the human cog nitive faculty thinks as if it were an intuitive understanding. This may seem indeed a faithful rendering of Kant's position.[21] However, in light of his critique of Kant's characterization of our limited understand

17 See *CJ*, E §§I–III.

18 *CJ*, §74, 330 (AA 5:396).

19 *CJ*, §77 brings to the fore the "distinctive character" (*das Unterscheidende*) of such concept which is declared an "idea" (345, AA 5:405).

20 *Vorlesungen über die Geschichte der Philosophie*, TWA, vol. 20, 380–381; see Düs ing (1986, 125–126). Goethe's reading of §§76–77 is very close to Hegel's. In our own thinking of living organisms, thinking must be one with its object, in tuition one with the concept. In a word: in thinking organisms, we think just like the intuitive understanding. See Förster (2002, 183).

21 See the accurate analysis by Düsing (1986).

ing on the one hand, and of his praise of the idea of the intuitive understanding on the other,[22] Hegel's reading can also be phrased, less ambiguously, as follows: we think of organic nature in terms of natural purposes *even though* our understanding is discursive and not intuitive. On Hegel's view, this is the important speculative opening offered by these sections: in the concept of *Naturzweck* the (otherwise) limited human understanding thinks like an intuitive one – or thinks intuitively – thereby transgressing its own limits. But does the concept of *Naturzweck* really belong to an intuitive understanding – and to our understanding *despite* its constitutive discursiveness, as Hegel suggests; or is it rather, for Kant, a concept peculiar to our human understanding precisely *because* of its limiting discursiveness? In thinking according to the concept of *Naturzweck* does our understanding transgress its limits or does it rather indisputably re-assert them? Shall we claim, with Hegel (but also with Goethe), that in thinking of organisms as natural purposes we think *just like an intuitive understanding* or shall we instead claim that we need the concept of natural purpose *because we cannot think as an intuitive understanding*; and consequently that an intuitive understanding thinks of a quite different nature than the one that we experience and make sense of through the concept of *Naturzweck?* What does it mean to *use* an idea *regulatively?*[23] On these questions hinges the decision that brings post-Kantian philosophy out of Kant's transcendental framework.

The examination of the context in which §§76–77 are placed, and the analysis of these two sections will allow us to establish the relationship between the concept of natural purpose and the peculiarity of the human cognitive faculty. On this basis we shall measure the distance that separates Kant's claim and Hegel's rendition of it. Ultimately, this is also the distance that separates Kant's transcendental philosophy from Hegel's speculative dialectic.

22 In addition, it is well known that Hegel has no particular sympathy for Kant's "as if" arguments.

23 The answer to this question is a centerpiece of the Dialectic of teleological judgment. It is also the point that was still unclear to Kant in the Appendix to the first *Critique*.

1.2. §§76 77 in Context: The Antinomy of Judgment

Kant opens the Dialectic by asking: "What is an Antinomy of the Fac ulty of Judgment?"[24] The question is all but self evident given the pe culiar character of the faculty investigated by the third *Critique*. Briefly put, Kant's argument is articulated by the following propositions: (i) a true *antinomy of judgment* is possible only as an antinomy of *reflective* judg ment; (ii) reflective judgment can be thematized only by a *transcendental* investigation; (iii) reflective judgment most distinctively instantiates the predicament of the human mind insofar as it is responsible for a specific form of experience of particular natural objects. The latter proposition is confirmed by the claim: (iv) neither dogmatism nor an intuitive under standing do or would share such an experience (they think of a different nature than the one which is reflected upon by way of the concept of natural purpose).

Kant claims that in general for an antinomy to arise the faculty in volved must be "autonomous,"[25] namely, capable of independently pro viding its principles.[26] It follows that if an antinomy of the faculty of judgment is to be possible, it must be an antinomy of "reflective" judg ment because determinant judgment has no "autonomy" but is only subsumptive under principles already given by the understanding. Re flective judgment, by contrast, is "*heautonomous*."[27] Moreover, since an antinomy is characterized by the "conflict" of incompatible and con tradictory principles, the principles involved will be the *principles of reflection*. These are "subjective maxims" and not objective principles: they are neither "sufficient" for determining occurring cases in experience nor do they provide the "sufficient" *Erkenntnisgrund* of the object. De spite all this, however, Kant insists that these maxims are "necessary" for the purposive use of our cognitive powers and for reflection on "a cer tain type of objects." They are indeed indispensable to reach a certain type of concepts, which, in turn, are necessary to our cognition of na

24 *CJ*, §69 title.

25 *CJ*, §69, 311 (AA 5:384); §71, 318 (AA 5:389).

26 Besides simply using principles legislated by other faculties: *CJ*, §69, 311 (AA 5:384): it must be "*nomothetisch*."

27 *CJ*, E, V, XXXVII (AA 5:185) The importance of this antinomy can be meas ured by the fact that the necessity of a third *Critique* is due precisely to the ne cessity of transcendentally investigating the peculiar autonomy of the reflective faculty of judgment.

ture in its particular empirical laws.[28] Now, it is among these "necessary maxims" (and precisely because of their necessity)[29] that a conflict, hence an antinomy arises. The dialectic that follows is a "natural" dia lectic because it is based on the very nature of the cognitive faculty from which those apparently conflicting maxims originate.[30]

The transcendental gesture that anchors the dialectic in the faculty of judgment as specifically reflective is the crucial point of the opening sec tion of the Dialectic. The first step in the solution of the antinomy in §75 and the argument of §§76 77 elaborate precisely on this claim. It is important to insist, with Kant, that the dialectic is based on "the na ture of the cognitive faculty." For the reference to the "peculiarity" of our understanding, which occupies §§76 77, is already contained therein. However, if the nature and peculiarity of the *Erkenntnisvermögen* are to give rise to an antinomy, they must be ascertained *transcendentally* not empirically or dogmatically. In other words, the "nature" of the fac ulty of judgment is determined exclusively by the type of principles it legislates a priori.[31] But if the specific limitation of the cognitive faculty and its dialectic are necessarily connected, then an intuitive understand ing (or simply an understanding whose nature is different than the one under consideration) would be a faculty for which no antinomy, hence no dialectic, and consequently no need for a critique would arise. Read in this light, Hegel's speculative generalization of §§76 77 is significant. He endorses the position of the intuitive understanding as truly specu lative but maintains the dialectic, which Kant instead implicitly removes in the case of a non discursive understanding. The dialectic, however, is transformed accordingly. It is no longer a *transcendental* dialectic, or a "natural dialectic" rooted in the peculiarity of our cognitive powers. It is instead a *speculative* dialectic no longer related to a mental faculty or its a priori principles but proper to "objective thinking," or to "every logical and real formation."[32] Thus, for Hegel, to endorse the perspective of the intuitive understanding is to abandon the philosophy

28 See *CJ*, §69.

29 See the first step toward the solution of the antinomy in §75 in which Kant un derscores this necessity at least three times; see also *CPR* B449/A421.

30 Hence also its necessary place in Kant's third "critique": *CJ*, §69, 313 (AA 5:386).

31 It is not determined by empirically detectable psychological dispositions or by a dogmatically assumed metaphysical constitution. Moreover, it is determined by the *use* that the faculty makes of such principles.

32 See respectively *Enz*. §§25, 79.

of the faculties that still framed Kant's transcendental investigation. Properly, the intuitive understanding is no "faculty" at all.[33]

The reference to *reflective* judgment specifies the sphere of the antinomy as that covered by the maxim of nature's purposiveness. The antinomy arises because reflection is bound (i) to *contingency* (the maxims cannot determine "sufficiently" the realm of its empirical cases,[34] which is open ended), (ii) to *specific natural objects* (organisms and living beings, not objects in general), and (iii) to the *empirical herterogeneity* of nature's laws (in contrast to the homogeneity and universality of the understanding's laws).[35] At stake is no longer "nature in general" thought according to "universal laws" but the heterogeneity manifest in the manifold of nature's contingent forms and revealed by "particular" laws.[36] These are the conditions that frame the antinomy of judgment from the outset. If we abandon these conditions, we abandon both the antinomy (which itself becomes illusory as an antinomy *of judgment*) and the reflective faculty of judgment (our judgment becomes determinant and dogmatic). But we also abandon the realm of this particular nature — living, organized, contingent nature — and the possibility of an *experience of this particular nature:* either because we revert to mere mechanism and "nature in general" or because we overstep nature's limits entirely and aim at its alleged supersensible ground. To miss the antinomy of judgment is to miss out on the possibility of a specific kind of experience. Such is the case of the various systems of dogmatic philosophy. But it is also the case of the intuitive understanding for which nature in general and its specific particularity are not separated and contingency is meaningless. Ultimately, to account for such peculiar experience — overseen by all variants of dogmatism — is the task of Kant's transcendental investigation.

The presentation of the antinomy through two distinct formulations of both thesis and antithesis is a consequence of its reference to *reflective* judgment. The difference that separates the two formulations is the difference between subjective, regulative maxims, and objective, constitutive principles; it is the distance between the (transcendental and critical)

33 If we take, for example, Plato's definition of "faculty" (*dynamis*) in *Republic*, V, 477c, the intuitive understanding does not properly relate to any object since it is immediately one with it, nor is the distinction between possibility and actuality valid for it. For Kant's position, see in general Gigliotti (1995).

34 *CJ*, §69, 312 (AA 5:3385).

35 See *CJ*, E, IV.

36 *CJ*, §70, 313 (AA 5:386).

problem of how to reflect and judge of some particular natural forms and the (metaphysical and dogmatic) question of what makes the pro duction of certain natural things possible. The latter and it alone leads to the further, dogmatic question of who/what produces such forms. The intuitive understanding is introduced in the context of the shift from the former to the latter problem. The antinomy allows for a solution only if formulated within the perspective of *reflective* judgment and it uniquely reveals the peculiarity of the *experience* of specific natural forms channeled through it. Kant's suggestion is that the two proposi tions of the antinomy become indeed contradictory only when the reg ulative maxims of the reflective faculty of judgment are illicitly "con verted" into constitutive principles concerning the possibility of natural objects.[37] At this point, however, we no longer face the *particular* aspect of nature we need to account for. And we no longer have an antinomy *of judgment*. We have a "conflict in the legislation of reason." But reason can demonstrate neither proposition since it has no insight into the pos sibility of things themselves.[38]

The first formulation displays the conflict of two regulative maxims. The thesis claims that mechanical explanations must be attempted for all natural phenomena and have priority over all other principles. The an tithesis expresses the limitation of the mechanistic view of nature and the need to complement it with the regulative principle of final causes in the case of *certain* natural products such as organized living beings.[39] The second maxim does not claim that the *existence* of certain things is possible only as natural purposes. It only maintains that they cannot be *thought of* or *judged* otherwise than as natural purposes. If the subjec tive maxims of reflective judgment are converted into objective princi ples of determinant judgment we meet the second formulation of the antinomy. Now the regulative maxims of the first formulation are turned into constitutive principles regarding "the possibility of ob

37 *CJ*, §70, 314 (AA 5:387). Thereby, the "autonomy" of the reflective faculty of judgment is confused with the "heteronomy" proper to determinant judgment: *CJ*, §71, 318–319 (AA 5:389).

38 *CJ*, §70, 315 (AA 5:387).

39 See also *CJ*, §80. The thesis claims that "all production of material things and their forms *must be judged* to be possible in terms of merely mechanical laws," while the antithesis contends that "some products of material nature *cannot be judged* to be possible in terms of merely mechanical laws" but requires reference to final causes (*CJ*, §70, 314–315, AA 5:387).

jects."[40] This, however, stages a conflict that does not involve reflective judgment. How does the insufficiency of mechanism to account for specific natural products[41] this insufficiency being precisely the basis for the antinomy of judgment relate to the peculiarity of our human cognitive faculty? A generalized answer to this question is provided in §§76 77.

Two points are relevant in the presentation of the antinomy with regard to the further developments of §§76 77. For one thing, in the first formulation Kant connects the antinomy to a problem due to the peculiarity of "human reason," namely, generally stated, the relation between the empirical particulars and the conceptual universal (or the problem of specification).[42] Significantly, this is the problem that the reflective faculty of judgment is called upon to solve in the third *Critique*.[43] For another, Kant refers the shift to the second formulation to the problem of settling the issue of the "possibility of things" by gaining insight into their "production (*Erzeugung*)."[44] Herein, one shift leads to another: the question of *how* certain things are produced becomes the question of *who/what* produces them.

The distance between (and compatibility of) the two maxims of the first formulation is measured by the problem of reflective judgment the same problem that human reason is unable to address: to grasp "*das Spezifische eines Naturzwecks*."[45] The antithesis claims that *"human reason*" in following the universal laws of mechanism never reaches

40 The thesis is transformed into: "All production of material things *is possible* in terms of merely mechanical laws," while the antithesis now claims that "some production of material things *is not possible* in terms of merely mechanical laws" (*CJ*, §70, 314–315, AA 5:387). These two propositions are synthetic a priori judgments, transcendental laws of nature, or constitutive principles of natural phenomena precisely in the sense of the first *Critique*. In the first *Critique*, Kant does not say, I have to judge all intuitions as extensive quantities, but rather, all intuitions are extensive quantities; he does not say, I have to judge all changes according to the relation of cause and effect, but rather, all changes are the effect of a cause.

41 Expressed by the second formulation of the thesis.

42 See *CJ*, §75, 338 (AA 5:400).

43 See *CJ*, E, IV.

44 *CJ*, §71, 317 (AA 5:388).

45 *CJ*, §70, 316 (AA 5:388)—emphasis in original; and also "our reason" in the same passage. The emphasis is on that specificity as much as on the notion of natural purpose. See also *CJ*, §75, 338 (AA 5:400) for the "*Spezifikation*" of universal laws.

"the specificity of a natural purpose," although it may attain cognition of other natural laws.[46] Thus, in the antithesis, reflective judgment cor rects a limitation of "human reason." Thereby, however, it also pursues a different objective: its task is not to know the possibility of such spe cificity reducing it yet again to universal laws but to merely reflect on its contingency. Herein the limitation of our cognitive powers is compen sated by an additional experience, which is, correspondingly, typically human. While an intuitive understanding would not face the problem of specifying a priori the concept of causality in the case of organisms, it would also not have a reflective experience of this aspect of nature.[47]

Another way to express reason's limitation with regard to contin gent particularity is to say that we cannot tell whether natural products may be the effect of a causality proper to an "*architektonischer Verstand.*"[48] Even before reaching §§76 77, Kant contrasts the limitation of "human reason" (in proving the possibility of things) to the productive powers of an "architectonic understanding" (in making things real). Reflective judgment is the intermediary between the two. We have an antinomy of judgment because we need to account for the specificity of "the pro ductive powers of nature"[49] although no insight into the production proper to an architectonic understanding is granted to us. While the an tinomy arises when a regulative explanation of the former is turned into a dogmatic claim concerning the latter, the regulative use of the maxims of judgment corrects the insufficiency of human reason providing a sur rogate of the dogmatic appeal to the architectonic understanding. The same limitation of the human cognitive faculty that makes it impossible both to assert that universal mechanism can produce organized beings and to assume a first intelligent cause positively grounds the need for a regulative principle that could serve as a heuristic "guiding thread" or a "mere idea" for the explanation of the "peculiarity"

46 The concept of causality cannot "be specified a priori" with regard to natural purposes: *CJ*, §71, 317–318 (AA 5:389).

47 This experiential compensation is never stressed in the post Kantian appropri ations of the thesis of the intuitive understanding.

48 We cannot know whether natural organisms as natural purposes may not be the special product of an "entirely different kind of original causality, namely an ar chitectonic understanding, which cannot at all lie in material nature, nor in its intelligible substrate": *CJ*, §71, 317 (AA388–389); see also *CJ*, §75, 338 (AA 5:400).

49 *CJ*, §71, 317 (AA 5:388).

of those forms of nature according to final causes.[50] It follows that the antithesis of the first formulation is a legitimate maxim of judgment even though and precisely because it cannot be proved by determi nant judgment (as claimed by the second formulation). Two radically different ideas stand here next to each other: the productivity of nature on the one hand, and the productivity of an architectonic understanding on the other. What keeps them separated is the limitation of human rea son. What brings them dangerously close is the concept of a "technic of nature."[51]

The problem of the antinomy regards the illicit conversion of the first formulation into the second. This conversion, in turn, implies the shift from the notion of nature's productivity with regard to partic ular forms to the productivity of a mind (an architectonic understand ing). This is the issue addressed in §77. Kant constructs the transition by introducing the notion of nature's technic. Since "no one has ever doubted the correctness of the principle that we must judge of certain things in nature […] in terms of final causes,"[52] the issue is not whether such generally accepted principle is true. The "only possible question" regards the *status* of this principle: is it a subjective, critical maxim of reflective judgment or an objective, dogmatic principle concerning the ontological possibility of things? And yet, even this alternative does not capture the core of Kant's concern. For, he suggest, we may very well "leave this speculative question or problem (*Frage, oder Auf-gabe*) undecided and unsolved" and still be able to investigate nature and disclose its most hidden secrets at least insofar as we work within "the extent of our human powers."[53] The problem is that even though we could indeed leave the speculative question undecided we do not. And we venture farther, following a "suspicion" of reason that a "hint" of nature seems to confirm.[54] The same suspicion leads us to fath om the workings of a non human understanding. This is the form that metaphysics as "fate of reason"[55] assumes in the third *Critique*. At this point, the undisputed maxim is turned into a "problem" (*Ausgabe*) the chief problem of the antinomy. Is the *nexus finalis* proof of another

50 *CJ*, §71, 318(AA 5:389).
51 *CJ*, §72, 321(AA 5:390).
52 *CJ*, §72, 318 (AA 5:389–390).
53 *CJ*, §72, 319 (AA 5:390).
54 *CJ*, §72, 319 (AA 5:390); see Nuzzo (2008, part III).
55 *CPR*, A vii.

causality in/of nature beyond mechanism or is it one with mechanism, although, being unable to discern such identity, we need a subjective maxim to think of nature's causality in analogy with the causality ac cording to ideas proper to art? To account for nature's productivity, the antinomy leads to the concept of a "technic of nature." At this junc ture, Kant places a discussion of the failure of all dogmatic systems to address the issue of nature's purposiveness.[56] Ultimately, the question concerns the necessity and conclusiveness of transcendental philosophy in front of the problem left unresolved by all metaphysical systems. While dogmatism either utterly negates the intentional intervention of a mind in nature or assumes it dogmatically but in neither case solves the problem of why we persist in thinking of nature according to the concept of natural purpose, transcendental philosophy proposes a third way that conjoins, in the mode of reflective judgment, teleology and theology.

The critical use of the concept of *Naturzweck* allows Kant to connect teleology and theology. Within the limits of a critical use of the princi ple, the explanation of nature's productivity with regard to particular forms may indeed turn to the notion of "intention,"[57] thereby institut ing the analogy with the "causality of an understanding that is produc tive."[58] The "architectonic understanding" in whose workings we have no insight, is now re introduced legitimately because analogically. The ground for the connection between teleology and theology is the con tingency that our appeal to the intention of a productive cause is meant to explain. Thereby, teleology leads to the assumption of an intelligent being outside of nature as that from whose intention the whole of na ture depends in its first origin. But here the crucial critical question aris es, which should serve to check any resurgent dogmatism: "What does even the most complete teleology of all prove in the end?"[59] Certainly it does not prove anything concerning the *existence* of an extramundane intelligent being (the first formulation of the antinomy is not the *proof* of another causality beyond nature). It only proves that due to the pe culiar constitution of our human cognitive faculties, we cannot form any concept of the possibility of the world that we experience in its

56 See *CJ*, §§72–73. These systems are typified in the "idealism" and the "real ism" of final causes.
57 *CJ*, §75, 333–334 (AA 5:390–391).
58 *CJ*, §75, 333 (AA 5:390).
59 *CJ*, §75, 335 (AA 5:399).

contingent forms without assuming the analogy to a "highest cause" working intentionally.[60]

2. Discursive and Intuitive Understanding: §§76 77

It should now be clear that the Dialectic of teleological judgment is the place of Kant's repeated attempt to think of the productivity of an architectonic understanding within the framework of transcendental philosophy. How far can (and must) the latter go in this endeavor without turning the first formulation of the antinomy into the second, thereby losing reflective judgment entirely and slipping into metaphysics? My contention is that the argument leading up to §§76 77 shows that the idea of the intuitive understanding *somehow* still belongs to transcendental philosophy. At stake is the distinction between the notion of an understanding that thinks intuitively, that is, differently than our human understanding, and the notion of an architectonic understanding as the ontological ground of nature's organized forms. The former is a limit idea that confirms and reinforces the perspective of transcendental philosophy; the latter is the dogmatic notion that brings philosophy back to metaphysics. In contrast to many interpretations of these sections, which stress the negative aspect of the limitation of our human cognitive faculty (hence, as in Hegel's reading, the liberating moment of the idea of the intuitive understanding), I insist on the other, positive side that for Kant complements such limitation. In exploring the "peculiarity" of the human cognitive faculty, transcendental philosophy does not renounce any of the objectives proper to the dogmatic systems: it does not renounce the thought of an architectonic understanding or the idea of nature's intentional causality or the project of theology. Yet it reframes these issues in a thoroughly new way because it makes them dependent on the peculiarity of the human cognitive faculty, hence, ultimately, on reflective judgment, the most peculiar of our faculties. While the latter cannot know in the way of an intuitive understanding nor can it have actual insight into the workings of an intentional cause beyond nature or produce in the way such a cause would produce, it can *think of* a non human understanding, can think *in analogy* to it, and can experience an aspect of nature in which nature itself works *as if* it had intentional causality. It is precisely in these sections that Kant finally formu

60 *CJ*, §75, 338 (AA 5:400).

lates the condition under which alone reason's ideas can be used in a *regulative* way by reflective judgment. Ultimately, the scope and validity of the latter (hence the conclusiveness of the third *Critique* in the critical project) are measured by how it succeeds in replacing the way a non human intuitive understanding would think. Although we do not think intuitively but only discursively, if we think reflectively we can make sense of objects that seem to fall within the forbidden province of an intuitive understanding. Yet, upon closer inspection, we also dis cover that such objects, for an intuitive understanding, would not con stitute occasion of a distinctive experience.

The concept of *Naturzweck* belongs to reflective judgment because of the limitations of human reason. With this concept, we are allowed to think of nature's productivity in analogy to reason's production, and we are allowed to bring in the idea of an architectonic or intuitive un derstanding. Thus, if we do not think directly *as* the intuitive under standing, as Hegel suggests, we nonetheless think *of* it legitimately when we maintain the framework of the antinomy of reflective judg ment (hence, we do not make of such understanding the ontological basis of the possibility of things) and reflect, as it were, on the "pecu liarity" of our own human cognitive faculty. Indeed, if we thought in the mode of the intuitive understanding we would not even meet the problem formulated in the antinomy of judgment, namely, the problem of an explanation of nature's purposiveness. Accordingly, I shall con clude that §§76 77 are not a speculative addition or an illicit overstep ping of the boundaries of transcendental philosophy. They offer instead the most advanced transcendental answer to the problem introduced by the antinomy of judgment: they indicate the farthest limits reached by our human cognitive faculty, namely, its capacity to think of the pro ductivity an intuitive understanding which is, as such, not human. Ul timately, in these sections, Kant presents a meta philosophical reflection on the scope, aims, and limits of the project of transcendental philoso phy a reflection conducted within the perspective of the reflective faculty of judgment and by this faculty itself. Herein, fulfilling and com pleting the task of transcendental philosophy, judgment attempts the highest act of reflection on what constitutes human thinking in its most distinctive sense. So formulated, the possibility of thinking of an intuitive understanding is the highest *act* of transcendental philosophy and the seal of its closure.

2.1. "If our understanding were intuitive …"

The remark of §76 hosts a discussion of the conditions that sustain the necessity of transcendental philosophy beyond the shortcomings of all dogmatic systems.[61] The text is structured as a succession of "examples" that illustrate the general predicament of human thinking as discursive thinking. Herein Kant offers a reflection on what 'thinking' is in tran scendental philosophy. More specifically, however, the examples ad dress the problem presented by the concept of *Naturzweck*:[62] for what kind of thinking does this concept give raise to an antinomy (hence to a dialectic, and accordingly to the need of a "critique")? Kant pres ents us with the human understanding reflecting on its own thinking ac tivity and referring such activity to itself as (judging) subject.[63] Only ap parently repeating the relationship between understanding and reason that in the first *Critique* leads to speculative reason's dialectic, Kant maintains that while reason as the faculty of principles aims at the un conditioned, the understanding as the faculty of concepts always and necessarily operates under a condition, which must be given to it.[64] Without the understanding's concepts, reason "cannot judge objectively (synthetically)" and becomes transcendent; its principles have no con stitutive but only regulative validity. This is the scene explored by the Dialectic of the first *Critique*. At this point in the Dialectic of the third *Critique*, Kant turns instead to the understanding. How does the understanding itself appraise the situation in which it "cannot keep pace with reason,"[65] hence cannot give reason's ideas objective validity? How do the ideas of reason appear to the understanding in the frame work of the third *Critique*, that is, when an antinomy *of judgment* not a "conflict in the legislation of reason"[66] is at stake? Kant suggests that the understanding, left behind by reason's aiming at the unconditioned and becoming transcendent, for its part *creates* its own condition a condi tion under which alone those ideas can claim a *regulative* validity. Clear ly, the understanding is here at work with the same "heautonomy" as

61 See *CJ*, §76, 339 (AA 5:401) for the importance of the remark for transcenden tal philosophy as such.
62 This connection is elaborated on in *CJ*, §77.
63 See *CJ*, §76, 339 (AA 5:401).
64 *CJ*, §76, 339 (AA 5:401): "die [Bedingung] gegeben werden muss."
65 *CJ*, §76, 339 (AA 5:401).
66 *CJ*, §70, 315 (AA 5:387)..

reflective judgment.[67] The condition under which to meaningfully op erate is not "given" to it nor is it found in determining the objective realm to which concepts refer; it is rather searched for in reflecting on the peculiarity of the subject's cognitive faculty. Since the under standing cannot give validity to reason's ideas in relation to objects, it limits their validity by referring them to the subject.[68] And yet, it main tains their universality insofar as it refers them to the *human subject*.[69] The condition, which the understanding gives to itself and under which it operates when it cannot refer reason's concepts to objects (hence when reason is involved in a dialectic conflict of its own) can be gen eralized as follows: "given any concept *we can form* of the faculty of a finite rational being as such, *all thinking must be like this and cannot be otherwise*"[70] without maintaining that the basis for this claim lies in the object. The remaining part of the remark develops three "examples" as illustration of this crucial condition the condition under which alone the understanding can make a regulative use of reason's ideas. To be sure, the question pursued through the examples and addressed reflectively (that is, turning to the subject and not to the object) is two fold: *How* does human thinking think? And *what* does it think on the basis of its transcendental constitution?

The first "example" regards the distinction between "possibility and actuality of things."[71] For the human understanding as "faculty of con cepts"[72] such distinction is necessary and indispensable. For cognition of objects to be possible, the understanding's concepts need to be synthe sized with the givenness provided by the separate, heterogeneous source of sensible intuition. While concepts regard the possibility of the thing thought, sensible intuitions provide the object's actuality. Thinking is unable to give its own object as actual, namely, as object of intuition; through concepts, thinking can only represent its object as possible. In other words, human thinking is discursive not intuitive, that is, not

67 This point becomes clear in *CJ*, §77: see 346 (AA 5:406).
68 *CJ*, §76, 339 (AA 5:401).
69 *CJ*, §76, 339 (AA 5:401), see the end of *CJ*, §75, with reference to the "*mens chliche[s] Geschlecht*."
70 The first part of the condition is specific to the "human cognitive faculty": "given the nature of our (human) cognitive faculty, or even given any concept we can form […]." (*CJ*, §76, 339: first emphasis in original, second emphasis mine).
71 *CJ*, §76, 340 (AA 5:401).
72 *CJ*, §77 (AA 5:406).

endowed with "complete spontaneity."[73] "If our understanding were intuitive it would have no objects except actual ones."[74] In this case, thinking would be without concepts (which concern the possibility of things) and without sensible intuitions (which give us the actuality of things). Our human thinking, by contrast, proceeds by way of synthesis of concepts and sensible intuitions. We can think of something that is merely possible without being actual (hence, when it exists, is contingent),[75] and we can represent something as given of which we have no concept. Clearly, the problem of the explanation of organisms and the problem that we face in the first formulation of the antinomy arises only from this predicament. It is indeed a particular and more complex instance of this predicament. The task herein is to find the concept for something given that is utterly contingent (cannot be entirely reduced to the universal laws of mechanism).[76]

The important point, for Kant, is to show that the separation between the possible and the actual bound as it is to the necessary separation of concepts and sensible intuitions characterizing the human cognitive faculty, is rooted in the subject's faculty and not in the nature of the objects, and yet somehow determines the kind of objects that we can think. In fact, the separation of concepts and intuitions *is no proof* that such distinction lies in things themselves, just as our need to think of organisms as *Naturzwecke is no proof* of a special causality according to purposes existing in nature but only reveals a subjective (although universally human) necessity.[77] However, the fact that the distinction between possibility and actuality lies in the human cognitive faculty does imply something crucial concerning the objects that we think of: they are "*Objekte der Sinne*," not "*Dinge überhaupt*." Just as the subjective necessity of our thinking discursively is brought to the fore by the possibility of thinking counterfactually of an understanding different than ours for which possibility and actuality are one,[78] so the specification of our discursive thinking as thinking of appearances is confirmed by the demand

73 *CJ*, §77, 347 (AA 5:406).
74 *CJ*, §76, 340 (AA 5:402).
75 *CJ*, §76, 341 (AA403); §77, 347 (AA 5:406).
76 See *CJ*, E, IV–VI.
77 See, respectively, *CJ*, §76, 340 (AA 5:402): "ohne darum zu beweisen […];" and §72, 320 (AA 5:390): "Ob die Zweckverknüpfung in der Natur eine besondere Art der Kausalität *beweise* […]."
78 *CJ*, §76, 340 (AA 5:402): "If our understanding were intuitive it would have no objects except actual ones."

of reason that we assume something existing with absolute necessity in which there is no distinction between possibility and actuality. Thus, significantly, the transcendental condition under which the understanding places our human thinking is limited by two distinct and yet connected ideas: (i) on the one hand, the notion of an intuitive understanding *for which* possibility and actuality are one; (ii) on the other, the idea of an absolutely necessary *Urgrund in which* possibility and actuality are one. In the former case, the notion of an intuitive understanding is formulated counterfactually on the basis of a reflection on our human cognitive powers; it is not a transcendent idea but a confirmation of the limiting condition of human thinking under which all reason's ideas ought to be placed (the issue is *how* thinking thinks). In the latter case, the understanding has no concept of the *Urgrund*, which thereby is an unattainable "*problematischer Begriff*" or "*Vernunftidee*," albeit an inevitable one (the issue becomes *what* thinking thinks).[79] If used under the restrictive, transcendental condition of the discursive character of human thinking and under this condition alone the problematic concept of an absolutely necessary being in which possibility and actuality coincide becomes a "regulative," hence "immanent"[80] principle that holds "for the use of *our* cognitive powers *in accordance with their peculiar character*," hence neither for objects in general nor "for every cognizing being"[81] (but only for appearances and for a finite rational being). If used, instead, overstepping that condition the problematic concept gives rise to the dialectic of reason unmasked in the first *Critique*.

Although *the way we think* is indeed rooted in the subject and not in the object, it ultimately and inevitably does influence and determine *what we think*. Since we think discursively and not intuitively, what we think is appearance and not thing in itself: its actuality remains for us distinct from its possibility. The notion of something existing absolutely as a necessary being in which possibility and actuality coincide is for our understanding a mere idea. And yet, we can think of an understanding that thinking differently than we do could indeed make sense of such an *Urgrund*. For such an understanding would be immediately identical with it. The fact that we can think of such an *Urgrund* only regulatively (that is, in relation to the faculty of judgment) is the sign that our understanding is discursive and not intuitive; and conversely, our

79 *CJ*, §76, 341 (AA 5:402).
80 *CJ*, §76, 342 (AA 5:403).
81 *CJ*, §76, 341(AA 5:403)—my emphasis.

understanding is only discursive because we cannot form an objective concept of such an *Urgrund*. Ultimately, the *regulative* use of reason's ideas under the 'reflective' condition by which the understanding be comes aware of the peculiarity of our cognitive powers is the surrogate of the way of thinking/intuiting proper to an intuitive understanding.

An analogous consideration of the import of human limits plays it self out in the practical sphere, where reason presupposes its uncondi tioned causality (i. e., freedom). If we abandon the limitative condition that transcendentally refers the modality of thinking to the subject, then the *distinction between obligation and action is erased*. The necessity of the practical law is the necessity of a command expressed in the form of duty not as *Sein* but as *Sein-Sollen*.[82] The reason for this lies exclusively in the possibility that human practical reason may be affected by sensi bility (desires, inclinations, and passions) and not immediately deter mined by the law. Indeed, for a "holy will" the moral law would not have the force of a command. For a reason that could always and nec essarily be effective without recurs to sensibility and sensible drives as condition for its efficacy (or for the actuality and realization of the com mand), the distinction between *Sein* and *Sollen* as well as that between "*Sollen und Tun*" would not hold; the moral law would not be a law (which is open to the possibility of not being respected); the distinction between what is morally necessary and what is physically contingent would not hold; and reason's causality would only take place in an in telligible world that would by necessity harmonize with the moral law. Ultimately, Kant suggests, "in such a world there would be no differ ence between obligation and action." But there would also be no differ ence "between a law that says what is possible through our doing and the theoretical law that says what is actual through our doing."[83] In this case, *all distinction between theoretical and practical reason would be completely erased*. If sensibility as an independent source of cognition were eliminated (i. e., if the distinction between possibility and actuality of things were erased) the specificity of the practical sphere and of Kant's practical reason would be lost. An intuitive understanding produ ces (creates) all that it thinks and consequently all that there is. In addi tion, this production amounts to the only type of activity possible. In this world, everything would be actual simply because, being good, it is possible.

82 *CJ*, §76, 342–343 (AA 5:403–404).
83 *CJ*, §76, 343 (AA 5:404).

As in the example from theoretical reason, the "regulative" validity of the concept of freedom is predicated on its relation to "the (in part sensible) character of our nature and faculty." Accordingly, such con cept is regulative for us and for "all rational beings connected to the world of sense."[84]

The last consequence drawn from the elimination of the restrictive condition that defines the human cognitive faculty or the last "exam ple" touches upon the core doctrine of the critique of teleological judgment and is further developed in §77. The discursive nature of our understanding requires us to move from the particular given in in tuition to the universal of the concept. The universal does not itself de termine the manifold particulars that are given in intuition and in sen sation. The particular remains contingent in relation to the universal under which it must be subsumed, so that the particular cannot be de duced or analytically derived from the universal.[85] If our understanding were intuitive, then it could go from the universal to the particular (which would be *contained in* it and not *subsumed under* it). The concep tual universal would directly determine (i.e., *produce*) the particular, which would consequently lose its contingency hence the need for being referred to a connection in terms of purposes in order to be ap prehended as part of a unitary and systematic whole. In this case, no dis tinction between "natural mechanism" and "technic of nature" as con nection in terms of purposes would take place.[86] The determinant fac ulty of judgment would effect the only possible kind of subsumption, so that there would be no reflective judgment and hence no independent faculty of judgment at all. However, in this case, determination would amount to production (and even to a sort of creation). The intuitive un derstanding would be "architectonic" precisely in the sense that our limited human reason cannot penetrate.[87] The particular would not be subsumed *under* the universal (the "analytic universal") but contained *in* it (the "synthetic universal").[88] The universal would not be a concept (discursive) but an intuition. Once again, the concept of nature's purpo siveness is a necessary but "regulative" principle "for our human faculty

84 *CJ*, §76, 343 (AA404).
85 *CJ*, §77, 347–348 (AA 5:408).
86 *CJ*, §76, 343 (AA 5:404).
87 *CJ*, §71, 317 (AA 5:389).
88 *CJ*, §77, 348–349 (AA 5:407).

of judgment"[89] the *regulative* principle doing the work of an intuitive understanding (or an understanding for which the universal determines the particulars contained in it) under the limiting condition of discursiv ity.

2.2. "We must presuppose the idea of an understanding different from the human one …"

In the opening of §77 Kant makes it clear that the connection between the "peculiarity of our (human) understanding" and the "idea" of *Naturzweck* an idea, which is itself peculiar and unique among reason's ideas[90] is due to its exclusive reference to the faculty of judgment and to the regulative use that judgment makes of it in reflecting on cer tain natural products. At this point, however, Kant pushes the argument a step further, and suggests that if the connection between reflective judgment and the idea of natural purpose should hold true, as §76 main tained, "then we *must* here be presupposing the idea of some possible understanding different from the human one."[91] This is necessary if we want (i) to claim that given the peculiarity of our human mind we need the concept of natural purpose to make sense of living nature, and (ii) if we want to do so without falling into the dogmatic postulation of a metaphysical absolute being (i. e., slipping into the second formu lation of the antinomy, which eliminates the faculty of judgment as such).[92] The cogency of this regressive implication,[93] namely, the move from the hypothetical and merely negative thought of an intuitive understanding in relation to which the *Eigentümlichkeit* of our own is es tablished,[94] to the *necessity* of its assumption as a critical idea that grounds

89 *CJ*, §76, 344 (AA 5:404).

90 *CJ*, §77, 345 (AA 5:405): "[…] darin hat sie [die Idee eines Naturzwecks] etwas von allen andern Ideen Unterscheidendes." Unlike other ideas of reason, the idea of *Naturzweck* is instantiated "in nature," which is precisely what generates the illusion of its possible constitutive use.

91 *CJ*, §77, 345 (AA 5:405)—my emphasis. For the parallel that Kant institutes with the first *Critique*'s appeal to a different intuition, see Förster (2002, 179) and Longuenesse (2007, 232–233).

92 *CJ*, §77, 345–346 (AA 5:405–406).

93 While Kant's argument in *CJ*, §76 proceeds in the form of conditionals, §77 does not hesitate to present the necessity of thinking of an intuitive understand ing in terms of a *muß* (repeated throughout the section).

94 *CJ*, §77, 347 (AA 5:406): "negativ […]."

the very use of the most peculiar of our mental powers, is the topic of §77. Indeed, our cognitive powers are peculiar in two respects: more generally, because our understanding is discursive (a point already established in §76); more specifically, because our understanding on the basis of its discursivity is set in relation to a very peculiar function of judgment, which is reflection.[95] Kant's suggestion is that in order to be able to use the idea of *Naturzweck* regulatively and reflectively (which we must do given the peculiar nature of our understanding) we must *already* be presupposing the idea of an understanding different than ours. Herein lies the solution of the antinomy. Briefly put, two are the steps that Kant proposes as necessary to avoid the slippage from the first formulation of the antinomy (the antinomy of judgment proper) to the second (the conflict of speculative reason that inconclusively occupies all dogmatic systems), that is, to avoid the metaphysical assumption of an absolutely necessary being as cause of nature: first, to recognize that the use of the idea of *Naturzweck* is regulative, whereby it calls in the activity of reflective judgment (§76); second, to recognize that the regulative use of the idea of natural purpose is, in turn, based on another, more original, and indeed "higher" idea which is the "*idea*" of a non human intuitive understanding (§77). In this way, the intuitive understanding *as a necessary regulative idea* becomes the ultimate basis (or indeed, the condition) of reflective judgment,[96] which is itself the (only) faculty that can make regulative use of reason's ideas. Thereby the transcendental shift (or the shift from the object to the subject)[97] is complete and assumes the form of a circle of reflection (it is itself an idea or perhaps 'ideal' of reflection). The peculiarity of natural organisms is explained in terms of the peculiarity of the human mind, while the intelligible cause of nature is recognized as the necessary "idea" that orients judgment's reflection on living nature in terms of natural pur

95 See *CJ*, §77, 346, AA 5:405–406. I want to suggest that whereas §76 already addresses the "peculiarity" of our human understanding, §77 regards what is most peculiar in even that *Eigentümlichkeit*, namely, the specific character of *reflective* judgment. Thereby we can explain the apparent repetition of the argument/example of the relation between universal and particular (and accordingly the function of contingency) in the two sections.

96 I underscore here, with Kant, "the *idea* of another possible understanding as the human one" (not, dogmatically, another understanding as *ens* or intelligent cause): *CJ*, §77, 345 (AA 5:405).

97 Recall the understanding's formulation of the condition under which it places reason's ideas at the beginning of *CJ*, §76, 339–340 (AA 5:401).

poses. In these sections, reflection discovers its own human "peculiarity," and in order to avoid the shortcomings of both determinant judgment and speculative reason (for which no *specific* experience of living nature is available and consequently no true antinomy arises) assumes the idea of a different, intuitive understanding as a norm or model with which to negotiate, analogically, the relationship between universal and particulars, hence, ultimately, contingency.

At issue is the relation between understanding and judgment a relation that takes place *only* in the case of a *discursive* understanding and is based on the peculiarity of the *reflective* faculty of judgment.[98] An intuitive understanding needs neither sensibility in order for actual objects to be given to it nor reflection in order to establish a harmonious relation between the contingent forms of nature and our concepts. Kant argues that in order to at least conceive of the possibility of harmony "between the things of nature and our judgment […] we *must* think of another understanding *in relation to which* we can represent the harmonious connection between the natural laws and our faculty of judgment as *necessary* even without the mediation of a purpose as intention."[99] The intuitive understanding would conceive of the whole of nature as an organism or a system in which the whole is the condition of the possibility of the parts. For an intuitive understanding, no contradiction (and no antinomy) would subsist between mechanism and teleology. Because of the discursive character of our understanding, on the contrary, we can conceive of the whole only as the mechanical "effect of the motive forces of the parts." For us, cognition and science are possible exclusively in this way. Yet, we can think of another possibility. Our faculty of judgment can assume the intuitive understanding as a sort of "model" and can follow the "standard" set by it.[100] In this case, we still need to adapt such a model to our cognitive limitations: "The only way that we can represent the possibility of the parts as dependent on the whole is by having the *representation* of the whole contain the ground for the possibility of the parts." The whole is the product or effect whose representation is the cause that makes the effect possible.[101]

98 See *CJ*, §77, 346 (AA 5:405: "Es kommt hier also auf das Verhalten *unseres* Verstandes zur Urteilskraft an;" and 348 (AA 5:406): "Unser Verstand hat also das Eigene für die Urteilskraft, […];" see more generally *CJ*, E, IV–VI.

99 *CJ*, §77, 348 (AA 5:407)—first emphasis in original, following emphases are mine.

100 *CJ*, §77, 349 (AA 5:407): "*nach Maßgabe*."

101 *CJ*, §77, 349–350 (AA 5:408).

This is precisely the way in which intentional causality works. Hence, under the transcendental condition of a discursive understanding, judgment's use of the principle of final causes becomes the surrogate for or the translation of the way of conceiving proper to an intuitive understanding for which no tension between mechanism and teleology would subsist. In the concept of natural purpose, judgment works as if its logic were the logic of an intuitive understanding.

Thus, conclusively, the reference to an intuitive understanding, allows us first to recognize that the antinomy between mechanism and teleology is valid only subjectively for the human mind; second, it suggests a situation in which no contradiction would subsist between the view of nature as mechanism and the view of nature as an organic and systematic whole (i.e., a situation in which no antinomy would arise); finally, it leads us to assume a way of reflecting in analogy with an intuitive understanding and to refer both our maxims to a "supersensible substrate of nature" in which they may find their unification.[102] This latter possibility is opened up by the limitation of our cognition to appearances, which discloses the possibility of at least thinking of a "thing in itself" underlying it as its "supersensible real basis."[103] The principle of the *Vereinigung* of mechanism and teleology "must be posited in that which rests outside" of the two maxims,[104] that is, in something that lies beyond all empirical representation of nature as well as beyond all possible determination. In the "indeterminate" (and indeterminable) concept of the "supersensible" (and in the connected notion of a "higher understanding"),[105] Kant locates the "*common* principle"[106] that explains how the reflective faculty of judgment – and this faculty alone – can reconcile mechanism and teleology. The supersensible does not provide the basis for an "explanation" of how a product is possible in terms of given laws. It offers instead a basis for the "examination" of this possibility by means of reflection.[107]

I have argued that in §§76–77 Kant presents the culminating moment of his transcendental philosophy. Herein human thinking – or

102 *CJ*, §77, 353 (AA 5:410).
103 *CJ*, §77, 352 (AA 5:409); §78, 359 (AA 5:413). The second formulation of the antinomy in terms of constitutive principles makes this situation utterly impossible.
104 *CJ*, §78, 357 (AA 5:412); 362 (AA 5:414).
105 *CJ*, §78, 362 (AA 5:414).
106 *CJ*, §78, 358 (AA 5:412).
107 *CJ*, §78, 357–358 (AA 5:412).

better, the faculty of judgment explored in its specific principles by the third *Critique* finally reflects on itself and becomes aware of its most proper subjective *Eigentümlichkeit* and conditions. In this way, Hegel's interpretation, which sees in the doctrine of the intuitive understanding Kant's overstepping the limits of transcendental philosophy seems refut ed. And yet I have also shown, this time in accordance to Hegel's read ing, that in the thought of the antinomy leading to the idea of the in tuitive understanding, our limited cognitive faculty working as reflec tive judgment does indeed think in a way analogous to a non human intuitive understanding. Back to the question posed at the beginning of this essay. My suggestion is that we need appeal to the concept of *Naturzweck* once we recognize (or become aware of), by an act of reflec tion, the peculiarity of our cognitive faculty. This is the function of the antinomy of judgment. We make a regulative use of such concept *because of* the specific limitation of our powers. And yet, in such a concept, we do also somehow overstep those limits. It is reflective judgment, however, and not speculative reason or the understanding as mere fac ulty of concepts that offers us the surrogate of the *Denkungsart* proper to a non human intuitive understanding.

Finally, my reading of §§76 77 as the conclusive *act* of reflective judgment by which human subjectivity becomes aware of itself and the constitutive conditions of its own thinking (hence, ultimately also of the conditions of transcendental philosophy as such) confirms the move from Kant to Hegel's notion of an absolute subjectivity that en compassing all conditions is itself unconditioned.[108]

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108 I have to leave this point as a mere suggestion. See however, Düsing's hints (1986).

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Safely satisfying reason: The metaphysics of design in Kant's teleology

Suma Rajiva

Abstract

According to Kant's Critique of Judgment we should judge organic beings through a principle of teleology. This generates an antinomy or conflict of reason with itself which Kant resolves through the idea of a god like designer of nature. Some commentators are sceptical about such a definitely theistic and metaphysical concept and others approve of it but are critical of Kant's restraining the use of the concept to reflective judgment. I argue that Kant's use of the designer is neither accidentally nor irrelevantly metaphysical and that, in accordance with the general demands of transcendental idealism, his restrained metaphysics of design satisfies human reason safely if not completely.

Introduction

According to Kant's *Critique of Judgment* we should judge organic beings through a principle of teleology for both specific scientific understanding of them as well as for a larger judging of nature as systematically purposive in all its empirical laws.[1] Using such a principle of teleology generates an antinomy or conflict of reason with itself and Kant resolves this conflict by the use of the concept or idea of a god like designer of na

1 For Kant we can only legitimately engage in the larger judging of purposiveness once we have already legitimately used teleology for immediate scientific judgment of organic forms; the latter judging is the "thin edge of the wedge" which allows us to extend such judging to all of nature. See the *Critique of the Power of Judgment (CPJ)*, 248–252; AA 5:377–381, (sections 66–67). All quotations from the third Critique are from the *Critique of the Power of Judgment*, translated by Paul Guyer and Eric Matthews, *The Cambridge Edition of the Works of Immanuel Kant*, (Cambridge: Cambridge University Press, 2000) and will be cited in the text of the paper or its notes with the above format: pages from Guyer/Matthews, Akademie vol. (AA = Kant, I., Gesammelte Werke, ed. könglich preußische (später deutsche) Akademie der Wissenschaften, Berlin1900 ff.) and pages and sections in parentheses.

ture. His use of a designer of nature has often been characterized as con fused or, at best, somewhat quaint[2], accepted with an air of understand ing that Kant "peoples his discussion with eighteenth century figures now thought to be nothing more than ghosts of earlier ways of thought."[3] At best, the introduction of the designer of nature is taken to be primarily a device for our thinking and Kant's achievement in the Critique of Teleological Judgment is characterized as "a typical shift in emphasis away from metaphysics in the direction of methodol ogy broadly conceived."[4]

By contrast Kant's rational idea of design can also be seen paradoxi cally as not robust enough, so that what it can accomplish, especially for the coherence of empirical laws, is limited in scope.[5] As Bernd Dörflin

2 For example, J.D. McFarland's classic discussion of Kant's teleology includes the comment that Kant is "still in the grip of the design designer analogy to the extent that he believes that we cannot understand organisms unless we re gard them *as if* they were products of a designing mind." McFarland (1970, 111). In the end McFarland concludes that we cannot avoid this notion if we want to subscribe to Kantian teleology but it is clear that for him this is an acceptance of a necessary evil.

3 Butts (1992, 100). Butts, generally sympathetic to Kant's teleology, does add that there "can be no doubt, however, that his discussion of the rationality of scientific prospects created the seed bed for later philosophical dialogue on the same problems." (100)

4 Butts (1992, 99). Guyer has argued that while the philosophical force of Kant's account of the designer is probably not very strong for us today that Kant's at tempt to synthesize purpose and natural causality has overall philosophical worth and significance, especially in the context of reconciling ethical duty with nature. See Guyer (2005, 363–372). This at least salvages much of the philosophical significance of Kant's teleology although I would argue that this can also be done safely while accepting much of Kant's own, more "meta physical," claims about the designer.

5 Interestingly, neither Allison (1991) nor Guyer (2005), though differing widely on Kant in general, fall clearly into either the methodological or robust inter pretations of teleology. The language of Allison's account leans in the direction of methodology and is thus quite metaphysically "thin" but he is able to accept much of Kant's actual account since the introduction of noumenal talk about the designer "as in all Kant's talk about the noumenal (at least from the theo retical point of view), functions merely as a placeholder for our ignorance." Al lison (1991, 38) This position is, to some extent, reproduced in Nuzzo's com mentary on the Analytic and Dialectic of Teleological Judgment. See, for ex ample, Nuzzo (2005, 339) Guyer, on the other hand, though accepting far less of Kant's actual language or claims, focuses, as I point out above, on the overall philosophical significance of Kant's teleology, including the designer. Another recent commentator, Zuckert (2007), shows an interestingly matter

ger puts it, the regulatively rational idea of a supersensible substrate of nature, along with the regulative use of the designer of nature, is "insuf ficient for the requirements of systematic unity" and there "seems to be neither a solution nor a key to a solution to the system problematic in the Critique of Teleological Judgment, if the regulative use of reason cannot be forced to undergo further modification than is possible on the basis of descriptive and interpretive judgment."[6] Angelica Nuzzo also points out that forcing such a modification was a goal of many post Kantian philosophers.[7]

However, either an unduly modest or a metaphysically robust tele ology can generate problems for a Kantian account of organic beings. On the one hand if teleology were to remain purely methodological simply in order to be metaphysically modest (and for no other reason) this would leave our human rationality dangerously unsatisfied in Kant ian terms. Moreover, as we will see, such a metaphysical modesty can also lead us in the direction of reductionism, where we drop teleology altogether. As Kant will argue, dropping teleology not only deprives us of an essential aspect of describing life, but would lead paradoxically to a hidden though minimalist metaphysics which assumes that life is only mechanical.[8]

Conversely, if we inflate teleology into a robust constitutive princi ple we commit a more obvious Kantian sin. Such a principle of design would undo the delicate balance of transcendental idealism as reflected in the Third Antinomy's famous division of jurisdiction between natural causality and noumenal freedom by directly interfering with natural causality through a robust and, for Kant, deluded, metaphysics. Such a

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of fact characterization of the designer as simply God though she is careful to keep the systematic role of the designer distinct from specific reflective judging of organisms.

6 Dörflinger (1991, 68 and 70). He goes on to describe the post critical views of the *Opus Postumum* as just such a further modification. Guyer agrees with this view of the relationship between the two works but is sceptical about the com patibility of the *Opus Postumum*'s arguments on teleology with the framework of the critical philosophy. See Guyer (2005, 107–108).

7 Nuzzo (2005, 348, n.8).

8 Life of course *is* mechanical also, as part of the universe of natural causality. However, Kant's claim is that *as* life it cannot be described meaningfully with out teleology though we should keep looking for mechanical explanations as well. Zuckert (2007, 163–168) gives specific examples of analyzing a living being, such as a bird, both teleologically and mechanically.

robust metaphysics would make organisms into designed purposes which are transcendentally real.

Thus, in order to avoid unwarranted metaphysics in either direction, minimalist or robust, Kant uses his theory of reflective judging to split the difference between teleology and mechanical causality in the resolu tion of the Antinomy of Teleological Judgement. The indeterminability of reflective teleological judging allows both teleology and mechanical causality to remain merely subjective maxims, whose use is to be deter mined by the type of object presented to the understanding. This inde terminability simultaneously grounds and limits design, so that the intel ligence of design can remain at the level of a descriptive maxim rather than expand illegitimately into a robust explanatory principle. I will be arguing that this indeterminability of reflective judging is directly de pendent on using the concept of the designer of nature, though this may seem counter intuitive[9] and may initially lead to some difficulties in interpreting Kant's text and in sustaining the coherence of his con cept of reflective judgment. In the end, however, the limited metaphy sics of design is neither accidentally, irrelevantly, or egregiously meta physical; in accordance with the demands of transcendental idealism generally, Kant's metaphysics of design turns out to be just sufficiently metaphysical to satisfy reason safely if not completely.[10]

1.

In the third conflict of reason, the third Antinomy, Kant lays out the opposition between claiming absolutely that the world includes both natural causality and the causality of freedom and claiming absolutely

9 It appears counter intuitive because one would expect that indeterminability and the modesty of judgment reflecting would be better served by using no concept of design, rather than using a robust concept such as the designer of nature.

10 This does not mean that no problems are left in Kantian teleology. Both Dörf linger (1991) and Guyer (2005) have discussed such problems and the possible role of Kant's later work in the *Opus Postumum* in solving such problems, Dörf linger optimistically, Guyer much less so. Guyer, especially, focuses on the issue of differentiating between organisms and other natural things and the simulta neous importance and fragility of this claim in the third Critique. Moreover, recent commentaries by Quarfood (2004) and Zuckert (2007) have indicated some tensions between the systematic teleology involving the designer of nature and specific judging of organisms as purposive.

that the world is solely governed by natural causality. In both cases human reason is claiming something unconditionally; moreover, this claim is about things, as if we knew them in themselves. As a result we get a strong argument for the necessity of freedom, as the uncondi tioned cause of various actions in the world, and then an equally strong argument for only natural necessity, unbroken by freedom. One side al lows the freedom necessary for moral agency, the other maintains the unbroken natural causality necessary for understanding.

In his solution to the conflict of reason generally Kant deconstructs the conflict in such a way that the participants turn out to have been fighting about nothing. Specifically, the paradigm of transcendental ide alism rejects the assumption common to both sides of all the antinomies, namely, that we are dealing with things in themselves, whereas we are actually, after the "Copernican revolution," dealing with things as they appear to us. In the case of the third antinomy in particular, Kant "splits the difference" between both sides: the party of the first part can be lim itedly right, since we can *think* freedom as a thing in itself or noumenon (thought object) and the party of the second part can be limitedly right as well, since we must *understand* things as they appear to us through the grid of natural causality as rule governed succession in time.

This basic solution, which turns on assigning moral rationality its grounding in the noumenal world and assigning natural causality its do main in the phenomenal world of appearances, involves transcendental idealism as a metaphysical basis. As Marcel Quarfood has emphasized, in the Antinomy of Teleological Judgment Kant will make a similar appeal to the duality of transcendental idealism[11] but his task will be more dif ficult since he cannot assign teleology to one world and mechanism to another, but must make the purposiveness of teleology apply to exactly the same world governed by mechanical causality. The "splitting of dif ferences" must occur within this world and it must also not violate the boundaries set up by the original solution to the third Antinomy. This requires the use of "reflective" or "reflecting" judgment in the *Critique of Judgment*.

According to Kant judging involves thinking of the particular in re lation to the universal and this can happen in two different ways:

> If the universal (the rule, the principle, the law) is given, then the power of judgment, which subsumes the particular under it […] is *determining*. If, however, only the particular is given, for which the universal is to be

11 Quarfood (2004, 160–171).

> found, then the power of judgment is merely *reflecting*. (*CPJ*, 66–77; AA 5:179 (sec. IV)).

Judgment which determines has the law laid down for it but the "reflecting power of judgment, which is under the obligation of ascending from the particular in nature to the universal, therefore requires a principle that it cannot borrow from experience" since through this principle, of the purposiveness of nature, reflective judgment unifies empirical laws of nature and thus experience itself. Thus:

> The reflecting power of judgment, therefore, can only give itself such a transcendental principle as a law, and cannot derive it from anywhere else (for then it would be the determining power of judgment), nor can it prescribe it to nature: for reflection on the laws of nature is directed by nature, and nature is not directed by the conditions in terms of which we attempt to develop a concept of it that is in this regard entirely contingent. (*CPJ*, 67; AA 5:180, (sec. IV)).

However, where there is no other viable method the reflecting power of judgment can use its own principle to supplement empirical natural laws and the framework of possible experience:

> […] the *reflecting* power of judgment is supposed to subsume under a law that is not yet given and which is in fact only a principle for reflection on objects for which we are objectively entirely lacking a law or a concept of the object that would be adequate as a principle for the cases that come before us. Now since no use of the cognitive faculties can be permitted without principles, in such cases the reflecting power of judgment must serve as a principle itself […]. (*CPJ*, 257; AA 5:385–386, (sec.69)).

Thus, judgment's *reflection* must provisionally take the place of given laws. Reflective teleological judgment will subsume under these provisional laws, until real laws are found, and also using real laws wherever possible. Real laws always have priority over provisional ones, except where the situation is not adequately covered by the laws we have. For example, mechanically explaining nature, according to the causality of the first Critique and therefore lawfully, normally has priority over teleologically explaining nature through a concept of reason; however, where judgment must force a path through recalcitrant territory, it is permitted to use the latter mode of explanation, because it serves where mechanical explanation has nothing to say. (See *CPJ*, 283 284; AA 5:415 (sec.78)).

For example, the reflective use of symbols is permissible for concepts which can have no other concrete representation. Empirical concepts have concrete examples, and pure concepts of understanding, such as

the categories, have pure intuitions, the schemata of the first Critique. Concepts of reason, however, are ideas, for which no intuition can, in principle, be adequate; nonetheless, as both the second Critique and the *Prolegomena* point out, such ideas can be actualized symbolically.

In section 59, "On beauty as a symbol of morality", Kant compares the symbolization of a constitutional monarchy by an organic body to the symbolization of a despotic state by a handmill. In both cases the concepts are being presented by means of a symbol; the concepts, while present discursively in our minds, are also "present" to us percep tually by means of intuitions, though these intuitions are *not* instances of the concept. An organic body is not an instance of a constitutional mon archy, nor is the latter an instance of the former. The same is true of the despotism and the handmill; they stand to one another as concept to in tuition, but unlike a "normal" concept of understanding, whether em pirical or pure, the despotism is not a characteristic of the handmill, nor is the handmill a characteristic of the despotism. Wherein, then, lies the connection? It lies in us, the judging subjects, and, in this case, the re flectively judging subjects:

> For between a despotic state and a handmill there is, of course, no similar ity, but there is one between the rule for reflecting on both and their cau sality [...]. Our language is full of such indirect presentations, in accordance with an analogy, where the expression does not contain the actual schema for the concept but only a symbol for reflection. (*CPJ*, 226; AA 5:352 (sec. 59))

Such symbolic expressions express a concept by analogy, by transferring the way we reflect on one object (such as a handmill) to our reflection on another object (a despotic state) for which we cannot present some thing in sensory intuition. For our reflection, the handmill stands in for the despotic state. Pure reason, similarly, can have no direct intuitions expressing its ideas, since these ideas are, in principle, not sensibly ex pressible. However, by analogy we can once again transfer our reflec tion in one area (e.g., beauty) to our reflection on another (pure prac tical reason as moral freedom). Our imagination is thus permitted to be extended in service of our freedom as long as such extension is properly regarded as symbolic and not theoretically explanatory. Beauty is no more an instance of morality than a handmill is of a despotic state, but it allows us to make a transition in our imaginations from the sen sibly seen to the supersensibly unseen, to moral freedom. It represents moral freedom in the territory of sensibility.

Similarly, Kant uses the idea of a designer of nature in the Dialectic of Teleological Judgment as a symbolic ground which allows the simul taneous use of opposing maxims, the maxims of mechanism and teleol ogy. As such a symbolic ground, the designer of nature is more than a heuristic device though less than a theoretical explanation.

2.

In the Analytic of Teleological Judgment, Kant argues that the kind of causality that the first Critique validated in the second analogy is neither appropriate nor adequate to explain a natural product like a tree or any other organic body. We need a model in which the whole not only de termines the parts but the parts also determine the whole, a model of reciprocal causality.[12]

Kant opens the discussion of teleological judgment with a contrast between aesthetic and teleological purposiveness. We have good reason he says to believe that nature is subjectively purposive for us and that it contains beautiful forms that set our mental powers into play, but we have no reason as yet to think that there is any sense in which nature is objectively purposive, that purposiveness has reference to concepts. Hence we look for a universal to explain the particularity of nature and its laws, but since this universal cannot be given, our reasoning is by analogy and hence reflective.

In such a reflection we find a purposiveness suitable for judging or ganic life, namely, material objective purposiveness: "the concept of an end of nature, only if there is a relation of the cause to the effect to be judged which we can understand as lawful only insofar as we find our selves capable of subsuming the idea of the effect under the causality of its cause as the underlying condition of the possibility of the former." (*CPJ*, 239; AA 5:366 367 (sec. 63). He adds that we can regard the *ef fect* as what is aimed at, as in a product of art, which he calls internal (or

12 However, this teleological causality is not the same reciprocal causality as the third Analogy in the first *Critique*. Firstly, the third analogy applies to a com munity of substances not to the individual substances themselves; secondly, it is a principle which involves schematization through time, whereas it will turn out that teleological reciprocal causality involves an idea of reason. How ever, it is striking that in both organic causality and the third analogy the suc cession of time is "turned around"; what is perhaps more striking is that Kant makes no reference at all to the third analogy in the discussion of organic life.

intrinsic) purposiveness, or we can see it as a means employed purposively for other ends, which he calls relative purposiveness. The former is the purposiveness of organic being and its causality must, says Kant "be sought not in the mechanism of nature, but in a cause whose productive capacity is determined by concepts", specifically, ideas of reason. (*CPJ*, 242; AA 5:369 270 (sec. 64)). This is because the causality of the mechanism of nature[13] does not take into account the functioning of an organism a whole but only looks at such functioning in the successive non holistic causality prescribed by the *Critique of Pure Reason*.

However, since organic life is not actually a product of art but is natural, something further is required to distinguish its purposiveness from an artwork.[14] A natural purpose is its own cause and effect reciprocally, in contrast to a object like a watch, for, as Kant stresses, if the only requirement were that the whole determine the parts, then an organic body would not be a natural product but would be considered a work of art, according to concepts of reason. In sec.64 Kant gives the example of a tree to show this in three ways. A tree reproduces itself as species, generating another tree; it reproduces itself as an individual, insofar as it grows and processes material for nutrition; and it exhibits a mutual dependency of parts. In the next section, 65, he then proceeds to argue that the kind of causality that the first Critique validated in the second Analogy is neither appropriate nor adequate to explain a natural

13 As Ginsborg (2001, 238–243) has pointed out "mechanism of nature" can mean a wide variety of things for Kant, ranging from descriptions of matter in physics to the overarching notion of natural causality versus noumenal freedom.

14 This need not be an absolute distinction. Ginsborg (2001) discusses the problem of such a distinction in detail but concludes that the purposiveness of artworks and organisms shares a similar normativity. The purposiveness of a pumping heart is its functioning well in the body, just as an artwork is also produced after certain norms. However, she *distinguishes* the purposiveness of artworks and organisms by stating that to 'regard something as a purpose without regarding it as an artifact is to regard it as governed by normative rules without regarding those rules as concepts in the mind of a designer." (2001, 251) This seems entirely correct but then leaves inexplicable the Dialectic's reflective use of a designer. However, in her 2006 discussion Ginsborg indicates one way to interpret the designer: As a hypothetical intuitive understanding in contrast with our discursive understanding. Although a "thin" way of interpreting the designer, this is fundamentally in accord with the approach taken in this paper, although I would stress that Kant's language, though in the end also "thin" (no actual designer proven), uses the designer as a robust symbol which, in his own words in section 75, complete teleology through theology,

product like a tree. That causality, which he calls mechanical causality, is essentially one sided, a descending series in which A causes B but B does not cause A, whereas the kind of activity exhibited by the tree is better explained by a model in which A causes B and vice versa.

The model of causality that Kant wants to use to explain natural products, essentially, organic bodies, is one in which the whole not only determines the parts but in which the parts also determine the whole, the model of reciprocal causality. Kant stresses that if the only requirement was that the whole determine the parts, then an organic body would not be a natural product but would be considered a work of art, according to concepts of reason. (*CPJ*, 244 245; AA 5:373 (sec.65)). The second requirement, that the parts determine the whole, and are hence reciprocally cause and effect of the whole, seems to act as a limit, one which makes the idea of the whole the " ground for the cognition of the systematic unity of the form and the combination of all of the manifold that is contained in the given material for someone who judges it." (*CPJ*, 245; AA 5:373 (sec. 65)). However, this ground for judging is not, importantly, directly the cause of the whole, because if the whole is caused by the idea of it, then it is a prod uct of reason directly, which is a transgression of critical boundaries. The idea simply becomes the basis for *judging*, presumably by analogy, and hence reflective, not determining.

The mutual causality of parts and the whole means that the produc tion of the whole can be thought of *as if* produced by a being that pos sessed the concept of this whole, and yet, the whole is a connection of specific parts and results from them. That is, we think the natural prod uct through an idea of a whole, which is connected to reason, purposes, and final causes, hence a causality of the will, but the *actual* causality of the natural product is a reciprocal conditioning of parts and whole, since the actual object is not simply intelligible but also sensible so that its ap pearance in this world must involve something understandable in the framework of possible experience. The use of an idea here allows Kant not only to link efficient and final causes but to move beyond the natural mechanism that belongs to the understanding, and refer what is a natural product to its supersensible basis.

However, although the use of the rational idea of causality through the will gives Kant a model for setting up a reciprocal causality of the conditioning of parts and whole, such use threatens to lead to a tension between the Analytic and the eventual discussion of the Dialectic. The model of the Analytic is primarily an immanent and reflective teleolo

gy.[15] Moreover, the reciprocity of the causality involved, as against the more "top down" approach of purposive design, suggests that anything approaching intelligent or purposive design will threaten to make life forms into artworks, though perhaps living artworks. The design which does not explicitly refer to a designer in the Analytic allows de sign to remain intelligible. The form is that of the causality of the will, but no actual will is invoked and Kant explicitly states that we actually ascribe all such intentionality to nature, in fact, nature considered as matter. He makes this even stronger by saying that:

> […] in teleology, insofar as it is connected to physics, we speak quite rightly of the wisdom, the economy, the forethought, and the beneficence of na ture, without thereby making it into an intelligent being (since that would be absurd); but also without daring to set over it, as its architect, another, intelligent being, because this would be presumptuous; rather, such talk is only meant to designate a kind of causality in nature, in accordance with an analogy with our own causality in the technical use of reason, in order to keep before us the rule in accordance with which research into certain products of nature must be conducted. (*CPJ*, 254–255; AA 5:383 (sec. 68)).

The Dialectic, by contrast, will turn to a reflective use of a *designer* of nature, which will make design simultaneously intelligent and artistic. How then can Kant keep the immanent life of intelligible design while positing an intelligent designer and why does he want to use the latter, much more imposing, metaphysical concept at all?

3.

The Dialectic of the *Critique of Teleological Judgment* deals with the antin omy that arises when the maxims of reflective judgment conflict with each other. Reflective judgment does not subsume under concepts given externally; therefore, in cases where the guiding principle is nei ther theoretical (the categories) nor practical (the categorical imperative) reflective judgment must serve as its own principle, since, as Kant puts

15 It is primarily immanent because the teleology describes the organism's recip rocal causality without tying this inexorably to a transcendent cause such as a designer. It is a reflective teleology because the teleology, while helping to con stitute the description of the organism as living, is not a determinate explanation of the organism through physical causality.

it, "no use of the cognitive faculties can be permitted without princi ples". Kant then says:

> […] in such cases the reflecting power of judgment must serve as a princi ple itself, which since it is not objective, and cannot be supposed as a suf ficient ground for cognition of the intention of the object, can serve as a merely subjective principle for the purposive use of the cognitive faculties, namely for reflecting on one kind of objects. (*CPJ*, 257; AA 5:385 (sec. 69)).

Merely subjective principles are maxims, which reflective judgment has in place of objective principles when its general subjective principle is further specified. However, such maxims are a route to concepts, "even if these are concepts of reason" and reflective judgment needs such concepts as it searches for knowledge of nature's empirical laws.[16] If a conflict arises between the maxims of reflective judgment, we get an antinomy.

The possible diversity and heterogeneity of particular laws of nature means that the unity we find in particular laws is essentially contingent, and this leads to possible dialectical conflict:

> Now in the case of this contingent unity of particular laws the power of judgment can set out from two maxims in its reflection, one of which is provided to it by the mere understanding *a priori*, the other of which, how ever, is suggested by **particular experiences** that bring reason into play in order to conduct the judging of corporeal nature and its laws in accordance with a **special principle.** It may then seem that these two sorts of maxims are not consistent with each other, thus that a dialectic will result that will make the power of judgment go astray in the principle of its reflection. (*CPJ*, 258; AA 5:386–387 (sec. 70); bold emphases added).

These "particular experiences" are, of course, our experiences of organ ic natural life. The first maxim that is given to judgment by understand ing is the thesis that "[a]ll generation of material things and their forms must be judged as possible in accordance with merely mechanical laws." (*CPJ*, 258; AA 5:387 (sec. 70)). The second maxim is the antithesis, that "[s]ome products of material nature cannot be judged as possible accord ing to merely mechanical laws (judging them requires an entirely differ ent law of causality, namely that of final causes.)" (*CPJ*, 258 259; AA 5:387 (sec.70)).

16 How reflective judgment is supposed to need concepts when it searches for its universals is a difficult issue which I have addressed elsewhere.

Kant then shows how these would read if they were not maxims but were constitutive principles of "the possibility of the objects themselves", leading to a definite antinomy:

> Thesis: All generation of material things is possible in accordance with merely mechanical laws.
>
> Antithesis: Some generation of such things is not possible in accordance with merely mechanical laws. (*CPJ*, 259; AA 5:387 (sec.70)).

However, as mere maxims, the thesis does not contradict the antithesis.[17] A directive to judge nature always in accordance with mechanical laws is not a statement about whether or not nature is only possible mechanically but only a directive to *reflecting* in terms of mechanism as far as possible (*CPJ*, 259; AA 5:387 (sec.70)). This does not preclude using the second maxim, because we are directed to use this maxim when confronted with natural objects for which mechanical laws have no explanation. We use mechanism as far as possible and where it falters, use teleology. And, adds Kant, none of this precludes the possibility that mechanism and teleology are united in "the inner ground of nature itself"; only, "our reason is not in a position to unify them in such a principle".

This essential reconciliation is unpacked in the next sections until we get a proper critical principle for reflective judging, in section 75. Here Kant develops a concept of the purposiveness of nature which stresses thinking nature as if it were designed by an intelligent being, rather than simply thinking nature as if it organized itself for the purposes of our judgment. If Kant is indeed using eighteenth century ghosts, then it is in this section where they really begin manifesting and

17 Recently Quarfood (2004, 160–171) and Zuckert (2007, 149–162) have discussed in some detail the issue of why this is an antinomy at all and why other commentators have found this puzzling. Both conclude that it is indeed an antinomy and that in the end, whatever the complexities of Kant's appeal to an intuitive understanding, that actual reflective judging of an organism is a legitimate and stable use of teleology. Quarfood also connects this antinomy closely to Kant's method in the antinomies of the first and second *Critiques*. (See below, note 26, for more discussion of Zuckert's solution) Ginsborg (2001) makes a compelling case for Kant's characterization of the conflict as at least a possible antinomy even if we are dealing only with statements of method rather than assertions of content: As she puts it, "If it is inconsistent to assert that something is both natural and a purpose, how is there any less inconsistency in merely thinking of it as both natural and a purpose"? This would, she states, require us to take up "contradictory attitudes toward it." (2001, 236).

where it starts to look as if teleological judgment is exceeding its char acter as reflective judgment, moving toward a metaphysics of the super sensible, in spite of Kant's claims to mere critique.[18]

4.

Before his own critical solution in section 75, Kant examines four com peting interpretations. These are either idealistic, seeing natural purpo siveness as unintentional or realistic, seeing it as intentional. For exam ple, Democritean atomism refers unintentional purposiveness to natural causes whereas Spinoza refers unintentional purposiveness to God. Re alistic interpretations of purposiveness either endow matter with inten tion, as with hylozoism, or, as with theism, place the intention of pur posiveness in an original intelligent cause. As Kant puts it "for the sake of the purposiveness of nature either **lifeless matter** or a **lifeless God** as well as **living matter** or a **living God** have been tried." (*CPJ*, 263; AA 5:392 (sec.72)).

Kant characterizes these claims as *dogmatic*, " i. e., concerning objec tive principles of the possibility of things" (*CPJ*, 262; AA 5: 391 (sec. 72)) and contrasts it with his own approach:

> Nothing is left for us except, if need be, to give up all these objective **as-sertions** and to weigh our judgment critically, merely in relation to our cognitive faculty, in order to provide its principle with the non dogmatic but adequate validity of a maxim for the reliable use of reason [*zum sicheren Vernunftgebrauch*]. (*CPJ*, 263; AA 5:393 (sec.72)).

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18 According to McLaughlin, a major problem which arises in both Kant's formu lation and solution to this antinomy is that the causality of the second analogy, which has been given jurisdiction over the phenomenal world in the solution to the third Antinomy, has been dethroned as constitutive of experience and re duced to a regulative principle. However, Allison has pointed out that the mechanism Kant is referring to here can be interpreted as different from (though related to) the causality of the second analogy. On Allison's interpre tation this mechanism is a possible unleashed mechanical causality thought by an intuitive intellect and different from the causality schematized by our discursive intellects in the first Critique. See Allison (1991) and McLaughlin (1990). See Guyer (2005, 354–363) for a discussion of some of merits and weaknesses of both positions. See also McFarland (1970, 30–32) for an earlier version of the "regulative principle" possibility and Zammito (1992, 222–224) for a re sponse to McFarland.

Hence, in addition to obviously metaphysical assertions, such as those of Spinoza or of theists, what we might now see as anti metaphysical sys tems, such as Epicurean atoms or hylozoism, Kant sees as actually *highly* metaphysical: they make dogmatic claims which overstep possible expe rience and refer to things which cannot be objects for us. For Kant a reduction of life to natural mechanism thus claims an insight into the nature of things which it cannot substantiate in the court of reason.[19]

Thus all the interpretations considered by Kant[20] seek either to re duce the object to mechanism (atomism or hylozoism) or to elevate it to art, in some sense (theism and, very loosely, Spinozism). Kant con siders both highly problematic in the court of reason. Explanation through divine art makes the natural organized object produced by some purpose outside of it but this leads quite obviously to overstepping the limits of possible experience through judgment which determines rather than reflects. However, the main objection to divine art as the explanation for organic life goes back to concerns Kant has already ar ticulated in the Analytic and which he restates here in the Dialectic:

> But even if it could be [divine causation of organic beings] how could I count things that are definitely supposed to be products of divine art among the products of nature, whose incapacity for producing such things in accordance with its laws is precisely that which has made necessary the appeal to a cause that is distinct from it? (*CPJ*, 268; AA 5:397 (sec. 74)).

Any interpretation which uses divine intention objectively leads to the elimination of the "natural" from a being considered as a natural pur

19 In such a criticism Kant is continuing the line of thinking he is famous for in the discussion of the Antinomies of reason in the *Critique of Pure Reason*, where sceptical and naturalistic claims, such as the assertion of complete natural neces sity, are treated just as much as flights of reason as are more obviously ration alistic claims about, say, the reality of freedom or the existence of a theistic first cause. Zuckert makes the point that purposiveness as a principle carries more possibilities of dogmatism since "the mechanical principle (or physical mechanism) does not generally tempt us illegitimately to make claims about the supersensible; these principles explicitly apply to objects as presented in space and time, and lie firmly within the domain of empirical science." (2007, 163). She is probably correct in *weighting* the temptations of the super sensible more heavily on the side of purposiveness but not in the claim that mechanism does not carry this temptation at all since Kant's point in the third Critique, a point continuous with the Dialectic of the first Critique, is that it is extremely tempting to go in for a dogmatism of reduction.

20 See Zammito (1992) for a comprehensive discussion of Kant's relation to these positions, especially hylozoism and Spinoza.

pose and subordinates the parts of this being to the idea of its whole, making it like the watch, whose parts exist for the sake of the whole, but which have no causal or productive power themselves. Minimally, this would violate the constitutive definition of life given earlier in the Analytic. Moreover, as Kant points out later in the Methodology of tel eological judgment, such an interpretation also leads to an unwarranted inference from our powers as conditioned to the unconditioned powers of a being (such as God) whom we cannot determine theoretically at all. Thus not only is reason "seduced into poetic enthusiasm" but the very reciprocal activity of the parts necessary for a natural object is re moved.[21]

However, the *reduction* of natural purposes to the mechanism of na ture also leads to the elimination of part of what a natural purpose is, namely the purposive or systematic element. The major reason for in cluding purpose has to do with the limited nature of mechanical causal ity in fully entailing empirical content. Although mechanical causality determines all empirical content as matter in space, it still leaves room for further description or at least reflection in non mechanical terms, depending on the nature of the specific empirical content. When we observe sand dunes and stalactites we need not refer to purposes, since mechanical explanation is more or less adequate for these phenom ena. However, other empirical objects remain underdetermined or in appropriately explained by mechanical laws and here non mechanical descriptions are both permissible and desirable. Therefore "it is an equally necessary maxim of reason not to bypass the principle of ends in the products of nature, because even though this principle does not make the way in which these products have originated more compre hensible, it is still a heuristic principle of nature for researching the par ticular laws of nature" (*CPJ*, 280; AA 5:411 (sec.78)). Without such a maxim we fall into the opposite of poetic enthusiasm since:

> […] always to stick with mere mechanism even where purposiveness, for the rational investigation of the possibility of natural forms by means of their causes, undeniably manifests itself as a relation to another kind of cau sality, must make reason fantastic and send it wandering about among *fig ments of natural capacities* that cannot even be conceived, just as a merely tel eological mode of explanation which takes no regard of the mechanism of nature makes it into mere enthusiasm. (*CPJ*, 280; AA 5: 411 (sec.78) em phasis added).

21 Thus we would lose the "rule of truth" for organic life from the Analytic while falling into dialectical illusion.

By going to extremes then in either case we are equally deluded, either into dogmatic reductionism or into dogmatic enthusiasm, seeing ma chines or ghosts but not living things.

We are still left, nonetheless, with a theoretical difficulty about the *status* of the principles of judging, even if these are necessary for our judging. A maggot regarded as a mechanical result cannot, says Kant, be regarded at the same time objectively as a natural purpose since an objective natural purpose would create a gap in the chain of natural cau sality linking all phenomenal appearances according to the *Critique of Pure Reason*. As already a link in this chain the maggot cannot also be an objective natural purpose. If, however, we first assume the maggot as an objective natural purpose, it will have no obvious way, as a pur pose, of entering the chain of natural causality.[22] To square this circle, we need intelligent design always to be only a critical principle, as it is presented in section 75, for such a principle at least makes no deter minate claims and thus will not compete with mechanism but can re main simply an alternate maxim in exploring nature.

However, for intelligent design always to remain a critical principle and thus a mere maxim (along with the principle of mechanism) we must find some overarching principle which can rationalize our using two maxims side by side. Such a principle would, in effect, be a unity of judging rather than a strict conceptual unity. Such an overarching principle would thus unify design and mechanism *symbolically* but not actually, a principle which would preserve the difference of the princi ples in their unity, in the same way that symbolizing a despotic govern ment by a handmill unifies two objects through reflection while pre serving their objective difference. We must, says Kant, place such a principle "in what lies outside of both (hence outside of the possible empirical representation of nature) but which still contains the ground of both, i.e., in the supersensible, and each of these two kinds of ex planation must be related to that." (*CPJ*, 281; AA 5:412 (sec.78)). As we will see, this also changes the two principles from explanations to

22 Kant does not go into this in depth but clearly the underlying reasons for this problem go back to the same difficulties with the objective concepts of freedom and natural causality in the Third Antinomy in the *Critique of Pure Reason:* the objective presence of freedom creates a gap in causality if we treat freedom and causality as applying to transcendentally real objects—they then cancel each other out or remain in perpetual conflict.

elucidations or expositions, from possible principles of determining judgment to principles for reflecting judgment.

The special qualifications of the supersensible for this role center on its elusiveness for theoretical reason, on our inability to make a concept out of it "except the undetermined concept of a ground that makes the judging of nature in accordance with empirical laws possible, but cannot determine this more precisely by any predicate". (*CPJ*, 281; AA 5:412 (sec.78)). Normally this might seem a dead end since we can say little or nothing about the supersensible except as a limiting concept. However the theoretical elusiveness of the supersensible turns out to be a virtue in this context, since the symbolic unity of teleology and mechanism re quires a concept which is not only indeterminate, so that it can comfort ably accommodate the two different critical principles, but a concept which will *stay* indeterminate, so that we need not wonder whether at some point the supersensible will be determined in favour of either mechanism or teleology. The supersensible's undetermined nature is really *indeterminability* rather than indeterminacy and as a result of such permanent indeterminability we can never ground either teleology or mechanism in a determining judgment which *explains* the possibility of natural purposes. We are left merely with "the **elucidation** (exposi tion) of this for the reflecting power of judgment." (*CPJ*, 281; AA 5:412 (sec.78)). Such a characterization of both principles permits us to

> presuppose that we may confidently research the laws of nature (as far as the possibility of their product is cognizable from one or the other principle of our understanding) in accordance with both of these principles, without being troubled by the apparent conflict between the two principles for judging this product; for at least the possibility that both may be objectively unifiable in one principle (since they concern appearances that presuppose a supersensible ground) is secured. (*CPJ*, 281–282; AA 5:413 (sec.78)).

Therefore when we expound nature teleologically we are using teleol ogy as a maxim of reflecting judgment and as such a maxim we subor dinate mechanism to teleology when appropriate, when dealing with, for example, organic beings. Such use of a maxim, says Kant, "is valid only subjectively for us" and objectively, since the supersensible cannot be determined for us any further, it is possible that teleology and mech anism are somehow united in a way beyond our human intellects. As Kant puts it "the two ways of representing the possibility of such objects are not to be fused into one for our (human) reason, but rather we can not judge them [organic beings] other than as a connection of final caus

es grounded in a supreme understanding". (*CPJ*, 283; AA 5:413 (sec.78)).[23]

5.

Throughout this elaborately diffident discussion Kant avoids the ex tremes of dogmatic or reductionist metaphysics by drawing upon a lim ited and critical metaphysics in intelligent design. Why not, however, simply abandon metaphysical explanations altogether, limited, dogmat ic, reductionist or otherwise, including the intentions of a supreme un derstanding? Why not simply quit the stratosphere of such rational ac counts and return to the Analytic's highly judgment oriented account of teleology, focusing on the reciprocity of parts and whole[24] and on tele ology as a way of judging in which we attribute a much softer version of intention to organic beings themselves?[25] This is in fact where the Dia lectic itself is at the end of section 70, where the possibility of antinomy is stopped in mid stream by keeping the two claims of mechanism and teleology as mere maxims.

That we cannot do so comes, at least in part, from the natural ten dency of human reason. "Reason is a faculty of principles, and in its most extreme demand it reaches to the unconditioned". (*CPJ*, 271;

23 We cannot determine a supreme designing intelligence any further but we do have, in the *Critique of Practical Reason*, a practical reason for postulating this in telligence as God. In the Methodology of Teleological Judgment Kant takes up the question of how to relate the teleological designer to God, and, perhaps sur prisingly, is reluctant to make strong claims here, saying that "Physical teleology certainly drives us to seek a theology, but it cannot produce one, however widely we may scrutinize nature through experience and however much we may supplement the nexus of ends discovered in it with ideas of reason (which, for physical problems, must be theoretical)." (*CPJ*, 307; AA 5:440 (sec. 85)) In the end the priority of the practical wins out and we truly only know God as the sovereign of the kingdom of ends, the appeal of natural design notwithstanding.

24 In his use of the designer of nature in conjunction with intrinsic purposiveness, Kant appears to have forged a synthesis in biology similar to his more philo sophically famous and controversial synthesis of rationalism and empiricism in the *Critique of Pure Reason*. According to Kolb, Germanic sources favoured in trinsic vitalist explanations of teleology while British explanations were theo logically oriented. Kolb (1992, 10–11).

25 This would also allow us to avoid any tension between living reciprocity and the trajectory of artworks inherent in using intelligent design.

AA 5: 401 (sec. 76)). This extreme demand generates various rational systems concerning natural purposes, including the four types criticized by Kant. Thus, if *explicitly* metaphysical but critical limited principles, such as the designer of nature, are abandoned, we will not be left with a modest empty space in which judgment can exercise its reflective teleology upon organic life; instead, the space of teleological judging will be dominated by the *implicit* and dogmatic metaphysics of atomistic or hylozoistic theories of natural purpose. Such a covert metaphysics, however, will not be able to do the job of supporting the reflective tele ology of the Analytic, since it has no adequate systematic exposition to account for such teleology. Such a reductionist metaphysics would sim ply go back to mechanism and the problem with this, as Clark Zumbach puts it, is that "mechanical wholes in nature are not deliberately con structed. We, therefore, have no right to view them as such. The mech anistic point of view does not justify our viewing nature in *the way in which we view designed artefacts*."[26]

There will thus be a systematic discrepancy in our rationality: judg ing would use a regulative teleology confined to nature, but there would be no rational account of why this might be legitimate in fact, abandoning an explicitly metaphysical account in favour of reduc tionism would imply that teleology was illegitimate. And, in so imply ing, a reductionist account would be itself illegitimately overstepping the bounds of possible experience by making philosophical claims about the status of natural life.[27]

Thus, assuming that our rationality really has the tendency toward holistic and total explanation, we require a rational account of life which supports teleological judging while being robust enough to pro vide an alternative to other metaphysical frameworks but not so robust as to overstep illegitimately the bounds of possible experience. Since it is reason and not judgment which unifies principles the field of explana tion must move from simply the territory of judgment to the domain of reason. Such a unifying explanation or exposition in the domain of rea

26 Zumbach (1984, 138). Of course, we could abandon teleology altogether in dealing with natural life but Kant thinks this is not possible. Whether it should be or not is beyond the scope of this discussion but Kolb (1992) and Weber and Varela (2002) provide some compelling reasons for retaining teleological talk. In fact, following Hans Jonas' work, Weber and Varela would like a more ro bust teleology than even Kant would support.

27 The danger, presumably, is that if we really have this tendency to large rational claims, we may smuggle them in anyway, without realizing we are doing so.

son must address what purpose means rationally, in order to make sense of using teleology along side mechanism. What it means rationally, given that the essence of Kantian reason is pure practical reason, is *intention*. Thus, to use the lens of reason to describe purposes is to introduce intention into the account of these purposes, making intention, at a cer tain level, a crucial systematic underpinning of teleology, even if it can not be an actual component of teleological judging, for all the reasons outlined in the Analytic.

However, one important caveat remains. Although supplying unify ing and systematic interpretations is the function of reason, the first Cri tique has shown us that such large rational accounts cannot be objective except in the case of pure practical reason's constituting of moral agen cy. Therefore, while Kant needs to move the account of natural purpos es into a higher court, the domain of reason, he must also simultaneously limit the kind of unity that reason can impose on the judging of natural purposes. He does this by making such unity completely subjective, for the use of reflective judgment:

> But what does even the most complete teleology prove in the end? Does it prove anything like that such an intelligent being exists? No; it proves nothing more than that because of the constitution of our cognitive facul ties, and thus in the combination of experience with the supreme principles of reason, we cannot form any concept at all of the possibility of such a world except by conceiving of such an **intentionally acting** supreme cause. Objectively, therefore, we cannot establish the proposition that there is an intelligent original being; we can establish it only subjectively for the use of our power of judgment in its reflection upon the ends in na ture, which cannot be conceived [*gedacht werden können*] in accordance with any other principle than that of an intentional causality of a highest cause. (*CPJ*, 269–270; AA 5: 399 (sec.75)).

Thus, the actual activity of reflecting upon life still takes place through judgment but is now systematized through a governing critical principle of rational intentional design. Such a critical principle allows us to see teleology through a typically Kantian lens of "as if designed by a su preme intelligence," and thus allows a rational account of how mecha nism can co exist with teleology, since both can be seen, in principle, as the result of such a supersensible designing intelligence. Put another way, we can analyze and describe organisms as reciprocally purposive, as Kant does in the Analytic of Teleological Judgment, and we can also analyze and describe them as mechanical objects generally. Then, when called upon to account for using these two principles simultane ously, we can describe their possible unity by describing organisms as

designed by a supreme intelligence. Such design, as Kant takes pains to show in the Dialectic, furnishes a rational account of the unity of the two principles.[28] Since we are postulating design by a supreme intelligence we preserve the teleological purposiveness shown to be necessary in the Analytic. The maggot, to use Kant's example again from the Dialectic, is functionally seen as a natural purpose. And, since that design by a supreme intelligence is *only* reflectively used, the maggot's functional natural purposiveness remains indeterminate, a device we use to render the maggot intelligible.[29] This is in turn means that the mechanical causality to which all natural things belong, including the maggot, is still the only objective and *determinate* causality. To maintain this distinction of indeterminate purposiveness and determinate causality we need the intelligible but indeterminate principle of a designing intelligence for otherwise we could not consistently conceive of a 'natural end,' a notion which by itself is not consistent since nature and ends are, in the Kantian universe, normally not united.

Such an intelligence cannot be determined further by theoretical reason and lies in the vague "beyond" of the Kantian supersensible; however, the very vagueness of the supersensible, in this case the supersensible supreme being, is actually its greatest asset in rationally unifying the theoretical maxims of reflective judging[30] rather than just good general Kantian policy. Such vagueness allows the shift to the methodological use of the two different maxims precisely because there is and can be

28 Zuckert (2007, 165–167) makes the interesting point that although we connect the purposiveness of organisms reflectively to God that this actually means that such purposiveness is external and imposed upon organisms. Her explanation is that we reflectively judge organic purposiveness to result from God but, in addition to our inability to fathom God's purposes, we specifically judge individual organisms through an internal purposiveness, through the kind of normativity suggested by Ginsborg (2001). Zuckert's point and overall discussion seem entirely correct but may leave us back in the kind of attitudinal contradiction raised by Ginsborg (2001, 236). Zuckert does suggest a kind of temporal structure of first internally judging and then afterwards judging systematically which may resolve such attitudinal contradictions.

29 It is tempting to say that the maggot's purposiveness is subjective but Kant has already stated that such purposiveness is constitutive of living beings and is therefore objective, though indeterminate. How we can have objectivity which is indeterminate is another question and a more difficult one for the interpreter of Kant's teleology.

30 As Buchdahl has put it, "the resulting confinement of the idea to its regulative or teleological aspects releases its methodological driving power." (1969, 526).

no clear cut dogmatic rational interpretation of the maxims. Mechanism and teleology as objective dogmatic interpretations of the natural world could not co exist peacefully. We need instead a reduction of their sta tus to subjective maxims and we need this status to *stay* reduced. A sym bolic unity through the designer of nature allows this permanent reduc tion while satisfying the systematic tendencies of our rationality.

Such a supersensible unity, as a governing interpretation of teleology is not only indeterminate but indeterminable, signifying the limits of reason. An indeterminable and symbolic interpretation of mechanism and teleology will allow them always to be only maxims in the judging of nature and thus prevents the necessary teleological judging of the An alytic from either being inflated into objective truth or deflated into nonsense. This reduction in status allows both teleology and mechanism to co exist peacefully in a critical methodology rather than battle it out on the field of a dogmatic metaphysics but, for Kant, we can only move toward the perpetual peace of such a methodology under the symbolic guidance of a limited and critical metaphysics.[31]

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31 A version of this paper was presented at the 2007 Winter Colloquium series of the Department of Philosophy, Memorial University; my thanks to those who attended and raised questions in the discussion and especially to John Scott and Toni Stafford for helpful comments afterwards; special thanks to James Bradley for his helpful comments on a draft of this paper. The paper has also benefited from the comments of anonymous referees for the *Kant Yearbook*; my thanks to them as well.

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The Antinomy of Teleological Judgment

Eric Watkins

Abstract:

This paper addresses two fundamental questions. 1. What is the antinomy of teleological judgment? 2. What is its resolution? The most satisfying answer to the first question—that it consists in a contradiction between the two regulative principles that Kant formulates—gives rise to a discussion of how one might prove these contradictory principles. With respect to the second question, I argue that none of the best interpretations on offer at present is philosophically adequate. For while important textual evidence supports appeals to 1) the notion of an intuitive understanding, 2) the claim that nothing is objectively explicable, and 3) the idea that mechanism is to be subordinated to teleology, none of these appeals actually removes the contradiction between the regulative principles in a satisfactory way.

1. Introduction

In this paper I address two deceptively simple questions: 1) What is the antinomy of teleological judgment? 2) What is its resolution? While both questions have received sustained scholarly attention over the years, it turns out that satisfactory answers have proved elusive and in some cases very basic questions that naturally arise in answering these questions have not even been clearly posed. With respect to the first question (2.), I argue (2.1.) that the most plausible line of interpretation of the antinomy of teleological judgment has it consisting in a contradiction between two regulative principles. At the same time, this interpretation faces two challenges. The first challenge (2.2.) concerns whether there is really any contradiction between the regulative principles, a question that is motivated, at least initially, by several sentences in §70 whose intent is not patently obvious. I maintain that a careful reading of these passages allows one to see the point Kant wants to make and why he would want to make it. I also argue that straightforwardly philosophical grounds support the idea that there is a genuine contradiction in the antinomy. The second challenge concerns what the proofs of the regulative principles might be. In the case of the mechanical regulative

principle (2.3.), I articulate three possible lines of argument, argue that two are manifestly inadequate, and settle on the third as the most attrac tive option on offer, even though it too is not entirely unproblematic. In the non mechanical case (2.4.), I tentatively suggest that Kant's argu ment is based on the limitations of our cognitive powers along with the related idea that the possibility of organisms lies in the supersensible.

With respect to the second main question (3.), I argue that a satis factory resolution of the antinomy remains elusive, despite our very best attempts. For the appeals that have been made to (3.1.) the notion of an intuitive understanding, (3.2.) the claim that not everything is ob jectively explicable, and (3.3.) the idea that mechanism is to be subor dinated to teleology are not adequate, which leaves us with a major un satisfied desideratum. In addressing these two questions in this way, my primary intent is neither to articulate and defend definitive answers nor to find fault with the best currently available answers, but rather to ad vance the current state of the debate by suggesting what questions must be pursued further such that we could eventually obtain an adequate in terpretation of Kant's Antinomy of Teleological Judgment.

2. The Antinomy of Teleological Judgment

In the Dialectic of the Teleological Power of Judgment, after first ex plaining (in §69) that the antinomy of teleological judgment pertains to reflecting judgment rather than reason, Kant turns (in §70) to specifying particular principles or maxims of the power of reflecting judgment and to explaining how they could come into conflict. He begins by noting that while the necessary laws that the understanding prescribes to nature a priori (e.g., the Analogies of Experience) do not involve reflecting judgment, the contingent unity of diverse empirical laws capable of giv ing us unified cognition of the world does and he mentions two kinds of maxims in particular that reflecting judgment would adopt to promote this end. One kind arises because the understanding places constraints not just on a priori laws, but also on empirical laws. A second kind arises because there are "particular experiences" (specifically, experiences of organisms) that we cannot explain mechanically and that require a "spe cial principle" (*CPJ*, AA 5:386). If these two maxims conflict, reflecting judgment will be at odds with itself, and we will have an antinomy.

Kant then formulates and discusses two specific statements of pairs of contradictory principles. The first pair states a contradiction at the level

of reflecting judgment such that the one maxim requires judgments in terms of mechanical laws, while the other asserts the inadequacy of judgments in terms of mechanical laws such that judgments invoking final or teleological causes are required instead. The second pair, by contrast, states a contradiction between constitutive principles possessing content that is otherwise analogous to that of the first pair. In short, in the first pair, the thesis and antithesis make a claim about how bodies must *be judged* and thus take these principles to be regulative, whereas the second pair concerns how objects must *be*, thereby "transforming" the first pair's maxims into constitutive principles pertaining to the pos sibility of objects themselves. Specifically, they read:

Thesis$_r$: All generation of material things and their forms must be judged as possible in accordance with merely mechanical laws.
Antithesis$_r$: Some products of material nature cannot be judged as pos sible according to merely mechanical laws (judging them requires an entirely different law of causality, namely that of final causality).
Thesis$_c$: All generation of material things is possible in accordance with merely mechanical laws.
Antithesis$_c$: Some generation of such things is not possible in accord ance with merely mechanical laws.

2.1. What is the Antinomy?

In light of these two separate formulations of contradictory theses and antitheses, one fundamental question arises immediately: Which pair of thesis and antithesis statements is supposed to represent the genuine antinomy of teleological judgment? One prima facie attractive option, which gained adherents especially in the first half of the 20th Century, is that of Thesis$_c$ and Antithesis$_c$, given that they are clearly contradic tory all generation of material things either is or is not possible in ac cordance with merely mechanical laws and Kant notes this feature im mediately after presenting them (*CPJ*, AA 5:388).[1] One might think further that both Thesis$_c$ and Antithesis$_c$ could be proved straightfor wardly: Thesis$_c$ by the argument of the Second Analogy of Experience and Antithesis$_c$ by the unique nature of organisms. Finally, the resolu tion of the antinomy would follow from well established Critical prin

1 See Cassirer (1921) and Ewing (1923).

ciples insofar it would consist simply in distinguishing clearly between constitutive and regulative principles and in rejecting the constitutive pair in favor of the regulative version, a move that could naturally seem to be supported by several crucial sentences in §70 and §71 (esp. *CPJ*, AA 5:387.35 388.19 and AA 5:389.6 11).

However, despite its initial appeal, this first option is not ultimately tenable. For one, it contradicts §69, whose main point is to show that the antinomy pertains specifically to reflecting judgment, and Kant re iterates this point immediately after stating the two pairs of contradic tions when he notes that if Thesis_c and Antithesis_c represented the an tinomy, then it would be an antinomy of reason, not judgment. For an other, Kant explicitly states that reason cannot prove either Thesis_c or Antithesis_c, which would be required for an antinomy to arise. Further, this option is contradicted by the very title of §71 "*Preparation* for the Resolution of the Antinomy" insofar as the distinction between con stitutive and regulative principles would already solve the antinomy, rather than simply prepare the way for its resolution. Finally, this option would render otiose the remaining sections of the Dialectic, where the antinomy is supposed to be resolved by means of distinctions other than that between constitutive and regulative principles.[2]

The failures of the first option speak strongly in favor of a second option, which holds that the antinomy consists of Thesis_r and Antithe sis_r. For this second option does concern reflecting judgment, given that Thesis_r and Antithesis_r pertain specifically to how we judge things, and not to how they are. It is also not in danger of trying to resolve the an tinomy too quickly in one fell swoop simply by distinguishing between regulative and constitutive principles given that this distinction must al ready be taken into account for the antinomy even to be formulated. As a result, this option leaves plenty of work to be accomplished in the fol lowing sections, just as it should, and by means of whatever moves are made there, though determining what these moves are and how they resolve the contradiction are questions that still need to be addressed (in 3. below).

2 For a more sophisticated interpretation of this kind of view, one that responds to these criticisms, see Quarfood (2004, 166–171). Unfortunately, I do not have space to discuss Quarfood's interpretation of the nature of the antinomy here.

2.2. The First Challenge

At the same time, this second option, which has come to represent the standard view in more recent literature, faces two significant challenges that have not been squarely addressed so far.[3] The first challenge initially derives from a textual issue, but then is backed up by straightforwardly philosophical considerations. In §70, after the statements of the two pairs of contradictions and the explanation referred to above (about why the constitutive principles do not constitute the antinomy), one English translation has Kant asserting: "By contrast, the maxims of a re flecting power of judgment that were initially expounded do not in fact contain any contradiction" (*CPJ*, AA 5:387).[4] This sentence obviously represents a major problem for the second option, since it would be at the very least extremely bizarre if Kant were to assert an antinomy and then immediately deny that any contradiction holds between its thesis and antithesis. This difficulty, in conjunction with Kant's refer ence to the "mere appearance" of an antinomy in §71, could easily tempt one into rejecting this option as well and holding that the entire antinomy is a highly artificial construct motivated solely by architecton ic considerations.

This purely textual issue might then be bolstered by philosophical grounds that question whether there is in fact any contradiction be tween these regulative principles. Why should it be a contradiction for one to look for a mechanical explanation of some phenomenon at the same time that one looks for a teleological explanation? If one takes the possibility of multi tasking into account, the contradiction can seem to disappear almost immediately, and the second option can appear to be just as untenable as the first.

However, I maintain that the second option can be successfully de fended against this two fold challenge along the following lines. As for

3 This view is developed by Allison (1991) and especially McLaughlin (1990).

4 This is the Cambridge (2000) translation of the *Critique of the Power of Judgment* (*CPJ*) by Paul Guyer and Eric Matthews. The other main English translation, by Pluhar, renders it as follows: "But if we consider instead the two maxims of a power of judgment that reflects [i.e., the first thesis and antithesis above], the first of those two maxims does in fact not contradict [the second] at all" (1987, 267). While this translation is different in some respects, it is still misleading in sofar as it maintains that the first maxim does not contradict the second maxim, which thus faces the exact same problem that the translation by Guyer and Mat thews does. McLaughlin (1990, 149, fn. 19) points out this problem as well.

the textual issue, it is essential to note that the German text reads as fol lows: "Was dagegen die zuerst vorgetragene Maxime einer reflectiren den Urtheilskraft betrifft, so enthält sie in der That gar keinen Wider spruch" (*CPJ*, AA 5:387.25 26). Literally (and inelegantly) translated, it reads: "By contrast, what concerns the initially expounded maxim of a reflecting power of judgment, it in fact contains no contradiction at all." Since it sounds strange to assert that a single maxim contains no contradiction, one can certainly understand why one might be tempted to transform the singular "maxim" into the plural "maxims". However, the text does clearly state the singular and one must be open to the possibility that Kant means to refer here to just the first of the principles of reflecting judgment, namely Thesis_r. In light of this I suggest that though the passage is indeed neither completely clean nor fully straightforward in its intent, one can read it as asserting not that Thesis_r does not contradict itself (which would be true, though not particularly significant in the context), but rather (more interesting ly) that it does not contradict either the truth or the falsity of either The sis_c or Antithesis_c, which he had just discussed in the previous paragraph and thus could easily be referring back to without any explicit mention.

Reading the text in this way is not only more faithful to what Kant actually writes, but also allows him to be making a point that is directly relevant to the matter at hand. Insofar as reason has not proven either constitutive principle, it is not clear whether Thesis_c or Antithesis_c is true. Even so, it would be a problem if the one that turned out to be true was inconsistent with Thesis_r. As a result, the sentence in question, as I read it, avoids this potential problem by asserting that Thesis_r does not contradict either Thesis_c or Antithesis_c, precisely because it is a prin ciple of reflecting judgment and not a constitutive principle. This read ing also makes sense of how the passage continues:

> For if I say that I must **judge** the possibility of all events in material nature and hence all forms, as their products, in accordance with merely mechan ical laws, I do not thereby say that they **are possible only in accordance with such laws** (to the exclusion of any other kind of causality); rather, that only indicates that I **should** always **reflect** on nature, and hence re search the latter, so far as I can, because if it is not made the basis for re search then there can be no proper cognition of nature. (*CPJ*, AA 5:387).

That is, Kant explains that Thesis_r is not committed to any ontological claim about what makes objects in nature possible and thus could not be threatened by whatever laws (whether mechanical or non mechanical) in fact make them possible. In the rest of this paragraph Kant then argues

that Antithesis_r is similarly not threatened by the truth of Thesis_c (as one might otherwise have thought). For even if we must explain some forms of nature according to a principle of final causality, as Antithesis_r suggests, events in nature might still be possible by merely mechanical laws (as Thesis_c asserts). Because it is the case that neither constitutive principle directly contradicts either of the regulative principles, one can see that the essential point of this paragraph is not to remove the force of the antinomy, but rather to show that it retains its full strength in the face of a potential difficulty.

If the text can be read in this way, the strictly philosophical part of the objection must still be faced. Is there in fact a contradiction between Thesis_r and Antithesis_r? It is clearly possible in general to seek two different explanations at once, just as it is in principle possible to undertake two separate actions simultaneously (e.g., to pat your head and rub your stomach). However, it must be noted that Thesis_r and Antithesis_r are not simply recommending that one pursue two activities at once. Rather, they are concerned with judgments about what makes the generation of material things possible, and on that point, they assert both that merely mechanical laws make such judgments possible and that merely mechanical laws do not make such judgments possible. Two points are thus crucial to understanding why a genuine contradiction does in fact arise here. First, Thesis_r and Antithesis_r are not simply *recommendations* to seek explanations of what makes the generation of natural things possible, but rather expresses commitments to *judgments* about such phenomena. Second, these judgments are genuinely contradictory insofar as the one says that mechanical laws all by themselves can be used to judge the possibility of the generation of natural things, while the other says that mechanical laws alone cannot be used to make such judgments. Whatever our judgment about what makes the generation of natural things possible, it must involve either mechanical laws (alone) or laws other than mechanical ones. Accordingly, if one sought explanations that involved both mechanical and teleological laws at the same time, one would be performing activities that contradicted Thesis_r insofar as one would be looking for explanations that were not restricted to mechanical laws (alone). So it is clear that Thesis_r and Antithesis_r are in fact contradictory on strictly philosophical grounds.

2.3. The Second Challenge: The Proof of Thesis$_r$

If one can respond to the first challenge in this way, this line of interpretation of the antinomy still faces a second important challenge. Insofar as the antinomy is to be constituted by Thesis$_r$ and Antithesis$_r$, they both require proof. Given that Kant does not have separate sections of the text explicitly dedicated to this task, as he did in the first *Critique*'s Antinomy of Pure Reason, the challenge here lies in identifying their proofs. Take Thesis$_r$ first. The simplest idea here is to suppose that it is justified by the Second Analogy of Experience. However, accepting this suggestion would conflict with the first *Critique*'s contention that the Second Analogy is a constitutive principle, given that Thesis$_r$ is clearly a regulative principle. While one might think that Kant's view is genuinely problematic in this regard, the standard view advanced by Peter McLaughlin (1990) and Henry Allison (1991) is that there is a significant difference between the Second Analogy and the notion of mechanism involved in mechanical laws. For however one interprets the notoriously difficult Second Analogy, it specifies that every event must be caused according to a rule (or law), but it neither asserts nor argues that the rule has to be a *mechanical* law. As a result, even if the Second Analogy plays some role in the justification of the maxim expressed in Thesis$_r$, it does not suffice on its own and would require significant supplementation.

What, then, could Kant's justification of Thesis$_r$ be? Why should we think that all generation must be able to be explained mechanically? Kant's explicit statements are quite minimal. As we saw above, he notes that without mechanical explanation, "there can be no proper cognition of nature" (*CPJ*, AA 5:387). However, he provides no explanation in this context of why that should be the case, and the secondary literature is silent on this very basic question.[5]

Three answers could be developed in response to this question. First, one might turn to the *Metaphysical Foundations of Natural Science* in the hopes that it establishes the necessity of mechanical explanation. After all, in its Mechanics, Kant argues for three Laws of Mechanics that

5 For example, Allison, who is generally very charitable to Kant, notes the absence of explicit proofs of Thesis$_r$ and Antithesis$_c$—"[w]ithout any further argument, Kant affirms that there are, indeed, two such maxims presupposed by judgment" (Allison 1991, 29)—but he makes no attempt to remedy this deficiency in Kant's account.

might fill out and justify the content of Thesis_r. The fact that he has al ready argued for these laws would account for the absence of an explicit justification of Thesis_r in the *Critique of the Power of Judgment*.[6] This line of argument, however, faces two serious problems. First, if its argument were successful, the *Metaphysical Foundations* would establish mechanical principles for explanation in science proper (in particular, physics), but it would not establish the necessity of mechanical explanation for all of na ture (either for sciences other than physics or for non scientific cogni tion). Given that organisms fall outside the purview of physics, one would have no reason to think that Thesis_r does or even should hold for them. As a result, the scope of this argument would be too narrow to achieve the desired result. Second, even if the *Metaphysical Foundations* could establish the necessity of mechanical principles for all natural bodies, these principles would still be constitutive rather than regulative, as is required for Thesis_r. Therefore, this first answer, which relies on the *Metaphysical Foundations* to justify Thesis_r, is clearly not satisfactory.

Another possible justification of Thesis_r stems from the fact that tel eological explanation presupposes mechanical explanation, despite being its rival. Because the parts of organisms not only are made possible by the organism as a whole, but also must contribute causally to the whole, teleological explanations cannot occur without also invoking mechanical explanations. For example, it is essential to the tree that its leaves contribute to its maintenance through mechanical processes, even if the leaves depend on the tree as a whole for their existence, functioning, and maintenance. Thus, when Kant says that we would have no cognition of nature without mechanical explanation, one might think that he is making this claim on the grounds that the only other kind of explanation available to us employs mechanical explana tion at some stage too, so there is no way around it in our search for cognition. Such a justification would not address someone skeptical about our ability to provide any explanation at all, but Kant does not seem to be concerned with such an extreme view in this context. The fatal difficulty for this second justification, however, is that given its very starting point (namely teleological explanation) it precludes the possibility of a *purely* mechanical explanation of such phenomena,

6 The Second Law of Mechanics also draws an important distinction between inert or lifeless matter (matter as such) and life (AA 4:544), which one might be tempted to view as spelling out the meaning of "mechanical" in "mechanical laws."

as Thesis_r requires. That is, Thesis_r states that the possibility of genera tion be judged in accordance with *merely* mechanical laws, not mechan ical *and* teleological laws. As a result, this second answer is, on reflection, clearly inadequate as well.

The third, and perhaps most promising, answer draws on what re flective judgment is required for and what it is supposed to accomplish. In the first paragraph of §70, after distinguishing between general a pri ori and particular empirical laws, Kant notes that

> […] there can be such great diversity and dissimilarity among [the latter] that the power of judgment itself must serve as a principle even in order merely to investigate the appearances of nature in accordance with a law and spy one out, because it requires one for a guideline if it is to have any hope of an interconnected experiential cognition in accordance with a thoroughgoing lawfulness of nature or of its unity in accordance with em pirical laws […]. (*CPJ*, AA 5:386).

That is, the unity of empirical laws is not given, but rather must be dis covered, and reflecting judgment is required for that insofar as it must try to organize particular phenomena such that they fall under particular laws that can, in turn, be unified within a larger theoretical framework of more general laws.

Even granting the necessity of the reflecting power of judgment for the discovery of the unity of empirical laws, however, the question still remains as to what justifies Thesis_r, with its emphasis on specifically me chanical laws. Why think that mechanical laws are necessary to this end? Three bits of textual evidence hint at an answer to this question. First, Kant's initial description of this maxim is that the maxim "is provided to it [i.e. reflection] by the mere understanding a priori" (*CPJ*, AA 5:386). The idea here is that empirical phenomena and empirical laws will be constrained by a priori laws, and insofar as mechanical laws have an a priori foundation in the understanding (in the guise of the Second Anal ogy or the Laws of Mechanics), it makes sense to consider right away the constraints that they place on the discovery of particular empirical laws and any unity that they might possess at some later stage. Second, Kant begins §71 by arguing that one "can by no means prove the im possibility of the generation of organized products of nature through the mere mechanism of nature" (*CPJ*, AA 5:388). If one cannot prove that all generation of natural material products does not occur ac cording to mechanical laws, one might be tempted to proceed on the assumption that it must always be possible to explain such generation ac

cording to mechanical laws. It would therefore make sense to start look ing for an explanation along those lines.

Third, later in §71 Kant remarks that in reflection one "always re mains open for any mechanical explanatory grounds, and never strays from the sensible world" (*CPJ*, AA 5:389). That is, while one might be tempted to appeal to highly theoretical concepts in attempting to ex plain the generation of natural phenomena, one must always be open to specifically mechanical explanation on the grounds that it keeps one firmly rooted in the sensible world, which must form the basis for any "interconnected experiential cognition." So not only should one look to build off the a priori constraints of the understanding's mechan ical principles, which serve as a fixed point in the search for unity, but one should also try to keep as close to what is given in sensible experi ence in working up to a unified set of empirical laws, given that me chanical explanations stay close to the empirical evidence and should also always be possible, at least in principle. Though the textual evidence for this interpretation is both fairly scant and widely scattered such that one could certainly question whether it is convincing in the end, it is still, I take it, the most attractive justification of Thesis_r currently on offer.

2.4. The Second Challenge: The Proof of Antithesis_r

If this justification of Thesis_r is adequate, what about Antithesis_r? An tithesis_r states that the generation of some material objects cannot be judged as possible according to mere mechanical laws. In §§69 73 Kant does not argue for this assertion beyond noting that "particular ex periences" suggest such a "special principle" (*CPJ*, AA 5:386). Given the Analytic of the Teleological Power of Judgment, the reader can rea sonably assume, however, that it is experiences of *organisms* that suggest *teleological* explanations. Later, Kant claims more explicitly that "it would be absurd for humans even … to hope that there may yet arise a New ton who could make comprehensible even the generation of a blade of grass according to natural laws that no intention has ordered" (*CPJ*, §75, AA 5:400), a claim that is reminiscent of very similar remarks he had made early in his pre Critical period (e.g., AA 1:230). However, such assertions simply make one want to know all the more *why* the generation of blades of grass and other organisms cannot be judged ac

cording to mechanical laws. That is, why are organisms mechanically in explicable for us?

McLaughlin (1990) has argued that an organism is not mechanically explicable because, as a natural end, "its parts (as far as their existence and their form are concerned) are possible only through their relation to the whole […] [and] its parts can be combined into a whole by being reciprocally the cause and effect of their form" (*CPJ*, AA 5:373). That is, an organism has a different causal structure from what machines have, since its parts are possible only through the whole (the organism as a whole causes its organs, cells, etc.) and its parts form a whole due to their reciprocally causing each other (the cells and organs interact in ways that bring about the whole organism). More specifically, plants and animals have the powers of growth, repro duction, and self maintenance. A machine or artifact, by contrast, is me chanically explicable because its parts have the properties and powers they do independently of any larger wholes that they might form. A clock may well have parts that interact with each other reciprocally, but a clock does not cause its parts and the parts do not cause each other, even if they are there for the sake of each other. In short, a clock does not grow, reproduce, or maintain its parts as an organism does (McLaughlin 1990, 152 153). A further difference is that artifacts are not *natural* ends, given that they are caused by an external agent ac cording to a conscious intention.

Hannah Ginsborg rejects this understanding of the mechanical inex plicability of organisms on the grounds that "there is no less of a need for teleology in understanding a machine such as a watch, than there is in understanding an organism" (Ginsborg 2004, 37). That is, both watches and birds involve relations between their parts that are determined by the nature of the whole (even if watches are not natural ends but rather artificial products). Granted, watches cannot reproduce or maintain themselves, but that does not detract from the fact that they are products of design and thus require teleological explanation just as much as birds do. Accordingly, Ginsborg argues that what makes an organism me chanically inexplicable is the fact that it cannot be explained in terms of "the mere forces of matter as such" (Ginsborg 2001, 244), or the fun damental properties of matter, whether it be matter in general or partic ular kinds of matter. In the *Metaphysical Foundations*, e. g., Kant develops an account of attractive and repulsive forces inherent in matter that ex plains how bodies can fill a determinate region of space and communi cate motion (e. g., in collisions according to the Laws of Mechanics).

Insofar as an organism's reproduction, growth, and maintenance cannot be explained solely by such attractive and repulsive forces and the Laws of Mechanics, an organism is said to be mechanically inexplicable in Ginsborg's sense.

Two questions in this debate need to be distinguished. First: Is the antinomy concerned merely with the origin of organisms, or is it con cerned primarily with the daily functioning of organisms? Second: Is an organism mechanically inexplicable because its parts are possible only through the causal efficacy of the whole, as McLaughlin maintains, or is it rather due to the special complexity inherent in an organism, one that is fundamentally different from the complexity that machines have, as Ginsborg holds?

Regarding the first question, it is somewhat surprising that no defin itive answer is immediately provided by any of the contexts that are ob viously relevant to Kant's discussions of organisms (even if certain state ments, e.g., at *CPJ*, AA 5:389 90, point in one direction). In fact, a careful reading of the statement of the antinomy shows that it is ambig uous on this very point, since Antithesis_r refers to "products of material nature," which suggests that functioning is at issue, while Thesis_r refers to the "generation of material things," which indicates that the origin of organisms is Kant's concern. Nor do Kant's various reflections on the debate between advocates of pre formation and proponents of epigen esis decide the issue.[7] Given this impasse, one could appeal to the anal ogy between the origin of organisms and Kant's concern with the first state of the world in the first *Critique*'s First Antinomy. However, it is difficult to see that the origin of organisms is particularly crucial to the unity of laws, which is what reflective judgment is supposed to bring about. So insofar as the unity of empirical laws is the issue, it would *seem* to be the daily functioning of organisms that is the central topic of the Antinomy. However, this question is deserving of further research.

Regarding the second question, several striking passages seem rele vant. In the first paragraph of §71, Kant emphasizes how the limitations of our cognitive faculties preclude us from knowing how organisms are actually possible. Kant thus remarks about organisms: "we have no in sight into their primary internal ground, and thus we cannot reach the internal and completely sufficient principle of the possibility of a nature (which lies in the supersensible) at all" (*CPJ*, AA 5:388). What this pas

7 See Fischer (2007) for detailed discussion of Kant's position on this issue.

sage suggests is that we lack insight into what makes organisms possible, given that it lies in the supersensible and we have no insight into the supersensible.[8] Along similar lines, he considers seriously the possibility that what is specific to organisms requires a kind of causality that cannot lie either "in material nature or in its intelligible substratum" (AA 5:388), and we cannot have a priori cognition of that kind of causality: "About this our reason, which is extremely limited with regard to the concept of causality if the latter is supposed to be specified a priori, can give us no information whatsoever" (*CPJ*, AA 5:389). Kant also says emphatically that he is claiming only that when we seek mechanical explanations, "**human reason** [...] will never be able to discover the least ground of what constitutes what is specific in a natural end" (*CPJ*, AA 5:388). If we can grasp mechanical laws but cannot grasp what makes organisms possible, then it is natural to infer that mechanical laws cannot be used to explain our judgment of the possibility of organ isms (even if mechanical laws were ultimately able to explain the possi bility of organisms in some way that we could not understand). Even if organisms turn out to be possible according to mechanical laws, or even if mechanical and final causation were ultimately grounded in a single principle, our reason can neither reconcile these modes of explanation nor grasp their unifying principle, given that it would lie in "the inner ground of nature itself, which is unknown to us" (*CPJ*, AA 5:388). As a result of the limitations of our cognitive powers, we have no choice but to adopt a maxim that goes beyond mechanical laws if we are to have any chance of explaining, or even of starting to explain, organisms. These passages thus suggest that Antithesis_r is justi fied by our experiencing organisms as specific natural ends that extend beyond the mechanical explanations available to us.

What thus emerges from identifying the antinomy of teleological judgment as constituted by Thesis_r and Antithesis_r is that they do con tradict each other, as is required for an antinomy, and that lines of argu ment can be identified that would prove, or at least go some ways to ward providing argumentative support for, both Thesis_r and Antithesis_r, which would satisfy another fundamental requirement for the presence of an antinomy. What is striking about the lines of argument we have found for Thesis_r and Antithesis_r, tentative though they may be, is not only that they contribute to the unity of empirical laws, but also that

8 It is unfortunate that Kant does not directly address the question of how we can know that the possibility of an organism must lie in the supersensible.

they do so in radically different ways. What recommends mechanical explanations in Thesis$_r$ is ultimately their proximity to the phenomena, since that must be one fixed point for reflecting judgment in its attempt to find unity among the laws of experience. What supports Antithesis$_r$, by contrast, is the fact — if it is one — that the possibility of organisms lies beyond experience in the supersensible and as such requires a mode of explanation different from that in terms of mechanical laws. In short, if Thesis$_r$ contributes to the unity of empirical laws by starting close to the phenomena, Antithesis$_r$ recognizes the necessity of allowing for what is distant from the immediate phenomena (in the supersensible).

3. The Resolution of the Antinomy of Teleological Judgment

The second main question that inevitably arises with respect to the Antinomy of Teleological Judgment concerns its resolution. Certain aspects of this resolution can be determined from the most basic features of the resolutions that Kant develops for the antinomies of pure theoretical and practical reason. Accordingly, Transcendental Realism is allegedly presupposed by the Thesis and the Antithesis, and Transcendental Idealism is required for the contradiction between the Thesis and Antithesis to be avoided and the resolution achieved. In this case, Kant uses §§72–73 to show that all other possible accounts of organisms — in terms of Epicurus's blind chance, Spinoza's fatalistic necessity, hylozoism's living matter, and theism's divine intentions — are, like claims based on Transcendental Realism, dogmatic and must be rejected as inadequate, while §§74–75 use specifically Critical reflections (if not claims involving Transcendental Idealism) to reveal the inadequacy of these dogmatic positions.

However, these most basic features, which are illuminating (to varying degrees) in the antinomies of theoretical and practical reason, may not prove particularly helpful in understanding the specifics of Kant's resolution here. As we saw above, no explicit reference has been made to Transcendental Realism in Thesis$_r$ and Antithesis$_r$ or in the arguments one might formulate on their behalf, and Transcendental Idealism seems to be important in this context primarily insofar as it helps in the diagnosis of the failures of the dogmatic positions. How it is involved in resolving the contradiction and explaining the possibility and nature of organisms is not immediately obvious. These limitations

suggest that the antinomy of teleological judgment must have a special dynamic of its own.

3.1. The Notion of an Intuitive Understanding

So what is this special dynamic and how it is relevant to a philosophically satisfying resolution of the antinomy? In §§76–77 Kant devotes considerable attention to describing the discursive nature of our human understanding and how it contrasts with an intuitive understanding (whether or not such an understanding actually exists). Since our understanding uses concepts to grasp whatever particular objects happen to be given to us (through sensibility), there is a distinction for us between possibility and actuality as well as between constitutive and regulative principles. Since an intuitive understanding would grasp all features of all objects immediately, it would not, Kant claims, distinguish between possibility and actuality and it would also have no place for regulative principles. As a result of these remarks, several authors have claimed that Kant's discussion of these different kinds of understandings is crucial to his resolution of the antinomy.

For example, Eckart Förster, who has recently distinguished very carefully in Kant's texts between the notion of an intuitive understanding and that of an intellectual intuition (Förster 2008, 266–267), argues that the notion of an intuitive understanding is central to Kant's resolution of the antinomy on the basis of two main points:

> Because all perceptions are appearances that always arise individually in sensibility as passive (A99), the understanding must combine them according to mechanical perspectives in order to make cognition of them. That is the one point. Since we must at the same time judge some perceptions teleologically, we can combine them with the mechanism of sensibility by tracing the unity of both back to the super sensible substrate of nature. *We* can do that only with the help of concepts of ends, but since we cognize that the concept of an end is a peculiarity of a discursive understanding and not that of an intuitive understanding, we do not need to ascribe this concept of an end to the substrate itself. That is the other […]. (Förster 2008, 270–271).

So the basic idea underlying Förster's interpretation of the resolution is that because the concept of an end is peculiar to our discursive understanding, it need not be attributed to the substrate of nature.

However, two aspects of Förster's explanation of Kant's position are, it seems, unsatisfying. First, it is difficult to see, on Förster's account, how exactly it follows from the specifically discursive nature of our understanding that we must attempt to explain the world according to mechanical principles. Even if it is true that particulars are given to us and that we must then find general rules (or laws) to cover them, and even if it is true that there is an element of contingency involved when general rules (or laws) are selected to cover them, neither truth directly entails the necessity of mechanical explanation, which maintains the priority of the parts over the whole. For if one takes into account only the concept of a discursive understanding, such an understanding could, it seems, encounter, or be given, either a part or a whole. As a result, it is only if one assumes that the part is given and that the whole is not, that mechanical explanation becomes necessary for us. Yet nowhere has this claim been argued for at all. So it is not clear that the discursivity of our understanding is as closely connected to mechanism as Förster maintains.

Second, and more seriously for understanding Kant's resolution, Förster's idea of an end that is peculiar to our discursive understanding is not sufficient to resolve the contradiction asserted in Thesis_r and Antithesis_r. The fact that an intuitive understanding might be able to understand the possibility of organisms does not entail that we can understand such a possibility, so Antithesis_r remains in full force. At the same time, Thesis_r is not threatened by what an intuitive understanding can do or by the fact that it operates differently from us.[9] As a result, nothing in this line of thought has shown that either Thesis_r or Antithesis_r is false (even if there could be a being for which neither would be true) and therefore nothing has removed the contradiction between them.[10]

9 Cohen (2004, 193) similarly notes that the conflict between regulative principles for our discursive understanding is not immediately removed due to a reference to an intuitive understanding.

10 Quarfood (2004, 189) likewise accepts the idea that the notion of an intuitive understanding provides argumentative support for understanding the resolution in this way. For he argues that the elimination of time removes the most problematic aspect of the natural purpose, with its suggestion of final causality or reversed time order. However, even if one were to somehow remove temporality from a natural purpose, it is still not clear what implications that would have for *our* understanding. In particular, one should not immediately infer the regulative status of a principle, simply because an intuitive understanding might not adopt that principle. For space and time are principles that an intuitive understanding would not adopt, and yet space and time are not regulative principles

While Kant's reflections on the differences between a discursive and an intuitive understanding and on their general philosophical importance are fascinating and one can immediately see why they would have such tremendous significance for later German Idealists, they are best seen as simply part of the larger context for Kant's resolution of the an tinomy, rather than as articulating the resolution itself. Some further move is clearly still necessary.

3.2. Subcontraries and the Assumption of Objective Inexplicability

McLaughlin, by contrast, places much less explicit emphasis on the im plication that the possibility of an intuitive understanding might have for the antinomy. Instead, his basic strategy is to use the specific resolution of the Antinomies in the first *Critique* as a model for understanding the resolution of the antinomy of teleological judgment. This strategy al lows him to focus on 1) the formal resolution of the antinomy and on 2) whether we must in fact be able to explain everything, for the contradiction disappears, he maintains, once we give up that assump tion. Regarding the first point, McLaughlin states: "The form in which this antinomy is resolved [...] is the subcontrary form. It is shown that, the false presupposition having been exposed and rejected, both thesis and antithesis in their new forms *can* be true" (McLaughlin 1990, 130). The First Antinomy in the first *Critique*, which asserts both that the world is finite and that it is infinite, is resolved by noting that Thesis and Antithesis contradict each other only on the assumption that the world must have a determinate magnitude. Once one rejects this as sumption (which one can do by noting that the assumption holds only for things in themselves, not appearances), one can see that both are false (for the sensible world) insofar the sensible world is indeterminately large. On the basis of the parallels between the first and third Critiques, McLaughlin's proposal thus holds that Thesis_r and Antithesis_r rest on a shared assumption and that, once one identifies and rejects that assump tion, one will be able to avoid the contradiction between Thesis_r and Antithesis_r, just as was the case in the First Antinomy.

McLaughlin then identifies the relevant assumption:

for us. Quarfood concludes his treatment of the antinomy with a brief discus sion of this problem, but refrains from endorsing any particular solution (Quar food 2004, 207–208).

> Our understanding has, according to Kant, the peculiarity that it can only explain mechanistically, that it can genuinely understand only that which it can itself produce out of its parts. Due to this peculiarity, we *must* judge all natural things to be possible according to merely mechanical laws, because it is only such natural objects that we can explain at all. However, apparent ly due to the same peculiarity, we *cannot* explain some objects in this man ner and have to introduce final (actually formal) causes. *We* must explain everything mechanistically, but nature need not always let itself be ex plained in this way. The incompatibility between the two maxims (R1, R2) [i.e., Thesis_r and Antithesis_r] is based on the presupposition that the necessity and impossibility are objective. Our subjective inability to explain things otherwise than in a mechanistic manner and our incapacity to ex plain certain things mechanistically contradict one another only under the presupposition that we *must* be able to explain everything. If there is a difference between causality and reductionist mechanism, such that cau sality is constitutive of the objects of experience and mechanism is merely regulative since it is based on a subjective peculiarity of our understanding, then it is at least possible that there may be objects of experience that are not explainable for us. (McLaughlin 1990, 162).

If not everything must be objectively explicable, then, McLaughlin claims, both Thesis_r and Antithesis_r can be true and the antinomy has been resolved.

However, despite its considerable attractions, this solution is unsat isfying on two main points. Now McLaughlin identifies as the crucial assumption the claim that everything must be objectively explicable. Yet it is difficult to see the relevance of specifically *objective* considera tions to the actual antinomy. Thesis_c and Antithesis_c are objective prin ciples, but, as we have seen above, they also do not represent the antin omy. Thesis_r and Antithesis_r, by contrast, are not constitutive or objec tive principles, but are rather regulative and subjective (pertaining to how we must judge). It is the contradiction between subjective princi ples that must be resolved. What is novel about McLaughlin's position on this issue, however, is his claim that the antimony holds only if ev erything is explicable. For if one rejects that assumption, then Thesis_r and Antithesis_r can pertain to different domains, just as rejecting the identification of the sensible and intelligible worlds in the first *Critique*'s Antinomy of Pure Reason allows one to hold that, e.g., determinism is true for the sensible world, while freedom is excluded for that class of objects, though not for the intelligible world. Accordingly, on McLaughlin's interpretation of the resolution, once one rejects the as sumption that everything is explicable by us, Thesis_r can be true of phe

nomena that are explicable by us, whereas Antithesis_r can be true of phenomena that are not explicable by us.

The problem with this particular aspect of McLaughlin's interpreta tion is that although it does resolve the contradiction, it also generates unwelcome results. The main difficulty is that it does not provide any criterion independent of mechanical explicability for determining whether phenomena are explicable by us, and thus no criterion that would allow us to apply the regulative principles stated in Thesis_r and Antithesis_r. That is, for any given phenomenon we would have no cri terion that would determine whether it is explicable by us and thus no way of knowing whether we should judge the phenomenon as possible according to mechanical laws alone or not. Notice how very different such a resolution would be from how the first *Critique*'s Antinomy of Pure Reason is resolved. Its distinction between the sensible and intel ligible world provides us with an explicit criterion for distinguishing be tween the things of which the thesis and antithesis will be true or false. In the case of freedom, for example, the distinction between the sensible and intelligible worlds allows me to know that if I am considering an action that occurs at some moment in time, then it must be caused by a previous event, while if that action is not such an event, then it is not impossible that it be free. The criterion contained in the distinc tion between the sensible and intelligible world is what allows us to ac count for what we can and cannot know, which is an essential part of Kant's Critical project. By contrast, the distinction between what can and cannot be explicable by us provides no criterion for applying the regulative principles that constitute the antinomy, leaving *us* unable to avoid a contradiction when confronted with a given phenomenon (even if there is, strictly speaking, no contradiction in the phenomen on).

McLaughlin's interpretation also faces difficulty in accounting for the practical import of Kant's resoluion. For Kant holds that we should try to explain any given phenomenon as far as we can according to me chanical laws. However, if the antinomy is resolved as McLaughlin pro poses, it is not clear why this recommendation would apply. For if a phenomenon is not explicable by us, then McLaughlin's interpretation of Antithesis_r would have it that we should judge that it is not possible according to mechanical laws. However, if we should judge that it is not possible according to mechanical laws, it is difficult to see how we could try to explain it as possible according to mechanical laws as far as we can (given that we do not even think that it is possible.) As a result, Kant

would not be justified in making such a recommendation if McLaughlin's interpretation were correct.

3.3. Subordination

Ginsborg suggests yet a different resolution to the antinomy. Instead of denying that we are able to explain organisms, she argues that Kant must show how Thesis_r and Antithesis_r "can be reconciled from the point of view of a discursive understanding applying these principles within the context of scientific enquiry, […] [a] step, which […] invokes the 'subordination' of mechanism to teleology" (Ginsborg 2008, 463). Ginsborg's focus on the application of principles within scientific inquiry is important, but it also raises the question of how this subordination should be understood. Ginsborg spells this out by suggesting that when scientists attempt to explain the origin of organisms, they do so on the basis not of inanimate matter, as would be the case for, say, collisions of billiard balls, but rather of matter that is already organized such that it is endowed with the kind of formative power that makes it possible for an organism to maintain itself and reproduce in ways that watches cannot.[11] Ginsborg develops her interpretation further as follows:

> In effect, then, [Kant] completes the resolution of the antinomy by allowing two different, although related, senses of mechanical explanation. On the narrower sense, on which the mechanical explanation of a thing involves accounting for its existence in terms of the fundamental powers of inorganic matter, organisms are indeed […] inexplicable by us. But they can still be mechanically explained in a weaker sense which does not exclude teleology, namely in terms of the powers of organized matter […]. (Ginsborg 2008, 463).

So Ginsborg's idea is that when we attempt to explain organisms, while mechanical laws are still invoked, they are not applied exclusively to inorganic matter. Ginsborg's interpretation has a clear advantage here in that it can find textual support in several sentences at *CPJ*, AA 5:414

11 In a series of further articles, Ginsborg has argued that a special kind of normativity is involved in such judgments. I shall not discuss her provocative and subtle claims in regard to this topic here, given that Ginsborg may not maintain that these claims are essential to Kant's resolution of the antinomy as they might simply be further claims to which Kant could be committed on independent grounds.

and AA 5:415 in §78, where Kant asserts the subordination of mechanical explanations to teleological explanations, as well as in several passages from §§80–81, where he provides examples of how we are to explain natural ends by considering what changes would occur to an organism if certain mechanical adjustments were made to it.

Though Ginsborg is right to note the importance of Kant's idea that mechanism is in some sense subordinate to teleology in Kant's resolution of the antinomy, her interpretation still faces two significant problems. First, Ginsborg does not explain how the contradiction between Thesis_r and Antithesis_r is to be resolved. The mere fact that teleological explanations must involve mechanical laws may well constrain how the resolution is achieved, but it cannot represent the resolution itself insofar as it does not explain whether and how Thesis_r and Antithesis_r are, e.g., both false. While one might think that subordinating mechanical to teleological explanation would require a restriction in the scope of Thesis_r, in §80 Kant states quite clearly that Thesis_r remains true: "The **authorization to seek** for a merely mechanical explanation of all natural products is in itself entirely unrestricted" (*CPJ*, AA 5:417), even though he immediately notes that our ability to identify merely mechanical explanations is severely limited. In fact, Kant claims that this limitation even explains why mechanical explanation is subordinate to teleological principles. So it is clear that the notion of subordination that Ginsborg rightly draws our attention to is many faceted and its implications for the resolution of the antinomy are not immediately obvious.

Second, Ginsborg's interpretation does not take into account one feature that Kant seems to insist on as crucial to explaining his resolution to the antinomy. In §78, for example, he writes:

> The two principles [of mechanism and teleology] cannot be united in one and the same thing in nature as fundamental principles for the explanation (deduction) of one from the other. […] For one kind of explanation excludes the other, even on the supposition that objectively both grounds of the possibility rest on a single one, but one of which we take no account. The principle that is to make possible the unifiability of both in the judging of nature in accordance with them must be placed in what lies outside of both (hence outside of the possible empirical representation of nature), but which still contains the ground of both, i.e., in the supersensible, and each of these two kinds of explanation must be related to that […]. (*CPJ*, AA 5:411–412).

What is crucial here is not just that Kant invokes the supersensible, but the use to which he puts it. The unifiability of mechanical and teleolog

ical principles depends on the supersensible, since the supersensible is the ground of both. More specifically, in his explanation of the claim just quoted, Kant asserts that the principle that underlies both mecha nism and teleology "justifies the maxims of natural research that jointly depend on it" (*CPJ*, AA 5:412). Kant thus seems to think not only that both Thesis_r and Antithesis_r depend on a supersensible principle, but also that the way to see how these otherwise incompatible principles can be rendered compatible is by seeing that they both depend on such a prin ciple.[12] Such claims obviously stand in need of considerable explanation and justification. However, rather than attempting to explain and justify them, Kant immediately goes on to assert that "we cannot form the least affirmative determinate concept of this" and that therefore how these incompatible principles can be rendered compatible "can by no means be explained" (*CPJ*, AA 5:412 413). Instead, Kant suggests that we should pursue the laws of nature whether mechanical or teleologi cal "without being troubled by the apparent conflict between the two principles for judging this product; for at least the possibility that both may be objectively unifiable in one principle (since they concern appearances that presuppose a supersensible ground) is secured" (*CPJ*, AA 5:413). These claims are deeply puzzling and raise many further questions. However, it is equally clear that Kant views them as playing a crucial role in the resolution of the antinomy. Unfortunately, neither Ginsborg's interpretation nor any of the other views discussed above ex plain these claims or show how they are to be incorporated into a com prehensive resolution of the Antinomy of Teleological Judgment.[13]

4. Conclusion

We are now in a position to summarize the most significant results that emerge from considering our two basic questions concerning Kant's Antinomy of Teleological Judgment. The one major result is that after it became clear that the antinomy consisted in a genuine contradic tion between two regulative principles (Thesis_r and Antithesis_r), we

12 2.2. above suggests this point too.

13 Cohen (2004, 193–194) goes further in claiming that the appeal to the super sensible shows that Kant *cannot* resolve the antinomy. Even though Kant's claims regarding the supersensible are undoubtedly difficult, I am not (yet) con vinced that they necessarily reveal insoluble problems in Kant's view.

were able to identify a significant problem concerning the requisite proofs of these principles, a problem with two sides: a) Kant did not provide clear and explicit proofs of either Thesis_r or Antithesis_r and b) no one had made particularly noteworthy progress in articulating plau sible lines of argument on his behalf (in spite of considerable debate about the meaning of his claim regarding the mechanical inexplicability of organisms). A second major result is that once the contradiction be tween Thesis_r and Antithesis_r was made precise such that it could not be quickly dismissed as resulting from a simple confusion, finding a resolu tion to the antinomy from within the framework of Kant's Critical phi losophy that derived from direct textual evidence and was philosophi cally rigorous, proved to be a challenge that is still outstanding.[14]

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Kant's Notion of Intrinsic Purposiveness in the *Critique of Judgment*

A Review Essay (and an Inversion) of Zuckert's Kant on Beauty and Biology

John Zammito

Abstract

Zuckert's Kant on Beauty and Biology (2007) marks an important moment in the re assessment of Kant's conception of organismic purposiveness. This essay first offers a grasp of Zuckert's accomplishment, then tries to draw from it—against the grain of her reading and, indeed, against Kant's own view—support for a post Kantian recognition of (objec tive) intrinsic purposiveness in organisms as a feature of the natural world, not just our cognitive limitations. The whole language of purposiveness with reference to biology, Zuckert correctly observes, is an act of "domestication" to the critical system, at the ex pense of any objectivity in the discernment of organisms in nature. But it is Kant's system of science that needs to be "domesticated" to the actuality of nature: this is a "constraint" that Zuckert insists the world must, even for Kant, exercise upon our logical construals.

Kant continues to attract attention in current philosophy of biology, but from the vantage of contemporary naturalism he appears more an impediment than a facilitator in establishing biology as a special but le gitimate science of nature.[1] Rejecting Kant's "regulative" view of in trinsic or objective purposiveness seems essential if we are to articulate a meaningful naturalist philosophy of biology. *Kant on Beauty and Biol- ogy: An Interpretation of the Critique of Judgment* (Zuckert, 2007) marks an important moment in the reassessment of his conception of organismic purposiveness. This essay first offers a grasp of Zuckert's accomplish ment, then tries to draw from it support for a post Kantian recognition of intrinsic purposiveness in organisms. Zuckert's sustained and persua sive account of the principle of purposiveness without a purpose raises against the grain of her reading and, indeed, against Kant's own view

1 On Kant and current philosophy of biology, see Steigerwald (ed. 2006) and Huneman (ed. 2007).

the case for (objective) intrinsic purposiveness as a feature of the natural world, not just our cognitive limitations.

1. Zuckert's Charitable Reconstruction of Kant's *Critique of Judgment*

The *Critique of Judgment* (*CJ*), taken in itself, is a work of almost bewildering diversity and complexity. If one then adds in the ambition Kant attached to this work to "complete" his critical system, finding *unity* in the endeavor is daunting. Divergent agendas clearly motivate the work. First, Kant offered a new, transcendental conception of the aesthetic. But he believed his "discovery" in aesthetics provided a decisive enhancement to his systemic conceptualization of the human mind and cognition.[2] This "cognitive turn" finds its textual heart in the two introductions to the third *Critique* and in the new concept of "reflective judging."[3] The connection between these two interests in Kant forms the heart of Zuckert's interpretation.

But that leaves, still, at least three important domains of concern in the text. First, there is the question of fine art and genius, that is, the *creation* of things of beauty. Zuckert explicitly sets this aside as peripheral to her pursuit (18), though it could provide additional support for some of her key conclusions. Next, there is the question of the "transition from nature to morality," which some of us consider to be the most important motivation in the work. It finds articulation in three textual components of the work: the treatment of the sublime, the discussion of "aesthetic ideas" and the "supersensible substrate," and, finally, most importantly, the discussion of moral teleology. Zuckert acknowledges this motivation (18; 370 ff), but she makes it quite clear that it is the transcendental problem of consciousness, not the problem of actualizing the moral law in a determinate phenomenal world, that she takes as most essential.

Finally, there is the specific problem of biology, or Kant's "Critique of Teleological Judgment" (*CTJ*). Zuckert tells us that Kant himself termed this a mere "appendix" to his *Critique* (20). She proposes to assign it prominence, but hardly for its own sake. It is rather central to her

2 Kant first announced this breakthrough in a letter to Karl Reinhold, Dec. 28–31, 1787 (AA 10:513–15), then elaborated the idea in the Preface to the *CJ*.

3 Zammito (1992).

strategy of "inversion" (169), through which she reconfigures the signif icance of Kant's attention to organisms as ultimately always concerned with the subject's own "capacity to judge."[4] That warrants what is a most striking feature of the organization of her monograph, namely her treatment of the *CTJ before* and *as a key to* her treatment of the "Cri tique of Aesthetic Judgment" (*CAJ*) and her ultimate reconstruction of "reflective judging." The *CTJ*, on Zuckert's reading, points to the *CAJ* as a new theory of judging altogether.

As her title indicates, Zuckert privileges beauty to biology in her treatment, ultimately for systematic reasons. The methodological princi ple she adopts is charitable philosophical reconstruction: "[…] like many reconstructive interpretations, this reading is guided by a principle of charity," she writes. (17). "Any interpretation of Kant's account as involving one activity of judging […] must reconstruct such claims in some manner" (330n), no unequivocal exegesis of Kant's text will an swer the questions that it raises. It is "necessary to supplement Kant's ac count" (368) in the spirit of his specific endeavor in the *CJ* as well as of the critical philosophy as a system. In her extensive account of the *CAJ* Zuckert addresses herself cogently to questions about Kant's claims to justify judgments of taste as a priori in terms of their universal and nec essary claims (ch. 8). She addresses the controversial question of the pri ority of pleasure or judgment in Kant's characterization of the aesthetic judgment (ch. 7). She sees Kant as offering "a substantive descriptive ac count of aesthetic experience" (179n), and she seeks in it "a richer, more plausible, and less narrowly subjectivist description" (181) than is found by other commentators.[5] She judges other interpreters of Kant's aesthetics by whether their gloss of Kant's *text* satisfies *our* attune ment, whether it "captures our experience of beauty more persuasive ly." (195) The goal is "to capture the motivational and satisfying char acter of [aesthetic] pleasure." (235) Thus, Zuckert observes, "if any thing, aesthetic experience seems to be a rapt absorption in (perceiving) the *object*." (189) Ultimately, this is about the "feeling of life" [*Lebensge-fühl*] of the subject and how it experiences/judges it. These are issues central to Kant's *CJ*, but not as central to purposiveness as the basis

4 The phrase gestures, of course, to Longuenesse (1998), to which Zuckert makes frequent, favorable reference.

5 The main exponent of this alternative and widely held view, and the main in terlocutor toward whom Zuckert directs her argument, is Paul Guyer. See Guyer (1997), (1996), (2005).

for the teleological judgment of organisms, my primary concern in this essay.

Zuckert sets out by noting that Kant's *CJ* addresses three distinct topics: aesthetic judgments, teleological judgments, and reflective judg ing. "As many commentators have noted," she writes, "neither aesthetic nor teleological judgment fits [the generic] definition of reflective judg ing" (66), i. e., finding a universal for given particulars. Yet Kant be lieved they are profoundly related. The issue, Zuckert suggests, is to as certain how Kant conceived this relation and whether he was warranted in doing so, both within his critical system and from our vantage. She takes seriously Kant's claim that the principle that unifies the forms of judging at issue in the *CJ* is *purposiveness without a purpose*. That is, she subordinates the principle of *systematicity*, which some commentators have suggested was or should have been primary for Kant, to that of *purposiveness*.[6] Her guiding question is: "can these three forms of judging be understood to employ *one* principle of purposiveness […] [i.e.,] purpo siveness *without a purpose?*" (69) What links the three forms, she con tends, is "representations of the object as complex unities." (70) More over, these representations are *empirical*, that is, contingent upon material phenomena, yet they must, to qualify as *judging*, involve "a *principled* way of discriminating among, and combining diverse aspects of experi ence." (14) Therefore, with Hannah Ginsborg, Zuckert believes that the key to this principle must be a "lawfulness of the contingent" (5n), for only this lawfulness can provide the *unity* in the diversity.[7] *Judging* simply is "unificatory activity that seeks to institute lawful, non ar bitrary relations among representations." (354n)

What distinguishes the forms of judging at issue in the third *Critique* is that their lawful unifications cannot make use of the categories of the understanding as in schematic or empirical determinant judgment. That is a consequence, essentially, of the second central feature of reflective judging, namely its situation in time as "future directedness." Accord ingly, Zuckert argues, the forms of synthesis that Kant envisioned in the first *Critique* cannot suffice. Kant "must invoke *another form* of syn

6 Systematicity has figured especially in the efforts to reconstruct Kant's general philosophy of science (and knowledge) in the works of such interpreters as Gerd Buchdahl, Michael Friedman and Paul Guyer. See: Buchdahl, (1965), (1967), (1969), (1971), (1981), (1986); Friedman (1986), (1990), (1991), (1992), (1992a); Guyer (1987), (2005). See also Allison (1994), Butts (1990), (1991), Kitcher (1983), (1986), (1994).

7 See Ginsborg (1987), (1997), (2001), (2004).

thesis" (354n), namely, the a priori principle of purposiveness (without a purpose). As Kant noted explicitly in the two Introductions, there is a distinct problem about *empirical* knowledge that remains (in our terms) underdetermined by the elaboration of the first *Critique*. Zuckert explains: "for empirical knowledge to be possible [...] we require a principle that establishes a unity of the diverse as such, a form of lawfulness that holds for the contingent aspects of nature as such." (24; and see 61) Indeed, for Zuckert "Kant's broader project in the *CJ* concerns our independent, epistemic need for a structure of the unity of the diverse or lawfulness of the contingent as such." (126) That is what Kant found in aesthetic judgment: "an imaginative activity that anticipates and legislates to itself a grasp of a fully individuated whole." (21) It allowed him to make an inference to all forms of (reflective) judging.

"Purposiveness characterizes what it is to *engage in the practice of judging* [...]" (77). The decisive feature that Zuckert discerns in the principle of purposiveness is its temporal dimension: future directedness, a projective temporality, and one that is, more specifically, not governed by a prior concept, but must anticipate unity, "aiming *towards* an indeterminate future" in order to "render comprehensible that which is not immediately comprehensible to us." (10) The essential transcendental question is: how is this possible? More concretely, how is this *com*possible with the critical system of "determinant judgment?" To make her case, Zuckert proposes a strategy of "inversion," because Zuckert believes that Kant most explicitly projects the *structure* of judging onto organisms as objects, and thus makes most perspicuous the essential features of that structure in this projection: "we *attribute* this structure means ends relations that constitute a unity of diversity, made possible by future anticipation to an object." (85; and see 90) That is, in the projection onto organisms we can most clearly read what Kant conceived as essential to the subject's procedure in judging.

According to Zuckert's interpretation of Kant, an organism is "characterized by internal purposive temporal relations among its parts/functions, which are not only influenced by one another, but also 'anticipate' the future states of the organism." (124) Temporality and causality essential features of Kant's transcendental schematism of the first *Critique* come into a paradoxical relation in this light: "That future state, as purpose, defines the present activities of the parts, but it also, reciprocally, is understood as determined by the present state and functioning of the parts, for it constitutes survival, i.e., the continuation precisely of the present, interdependent functioning of

those parts." (125) Thus we have "ascending" and "descending" chains of determination, as Kant put it (AA 5:372). But this is in violation of the irreversible directionality of "objective time order" that is essential for Kant's schematic application of the categories, and particularly of causality. Accordingly, such judgments must, for Kant, be only subjec tive, however necessary.

The horror of teleology, which haunts "function talk" to this day, as Zuckert notes in references to Cummins and Nagel (121n; 166n), is "backwards causation."[8] Kant shares that horror. (136) Indeed, the whole language of purposiveness with reference to biology, Zuckert correctly observes, is an act of "domestication" (239) by Kant: domes tication *to* the critical system, at the expense of any objectivity in the dis cernment of organisms in nature. "Intentional activity provides Kant with a reductive account of purposive causality that is assimilable to the efficient causal time order of necessary, irreversible succession." (141) "This reductive regulative idea allows us to 'bracket' the organ isms' self organizing character." (165).

Kant knew reading organisms as artifacts is an inept analogy. The last thing he wanted was for us literally to take them as artifacts, because this would imply either that a God made them or that nature could. The first is a transcendent claim; the second is "hylozoism," a flat contradic tion if (but *only if*) we accept Kant's stipulation about matter.[9] Still, there is a positive aspect to this *dis*analogy: organisms "ought to be understood as more thoroughly, *intrinsically* purposive than artifacts." (119) A better analogy, and, indeed, central for Zuckert, is "with our own *causality* in the technical use of reason." (122; citing AA 5:383) In characterizing what aesthetic judgment implies about the structure of subjectivity, Zuckert takes Kant's "feeling of life" as "a state of dynamic self propa gation […] a state of intense, heightened awareness and self awareness." (266) "Purposiveness without purpose," she contends, is the best phil osophical reconstruction of that dynamic self propagation. "The princi ple of *purposiveness*, as definitional of pleasure, does not function as a

8 On "backwards causation" in "function talk" see Wright (1973), Cummins (1975), Nagel (1977), Millikan (1989), Neander (1991), Godfrey Smith (1994).

9 "We cannot even think of living matter [as postulated by one form of hylozo ism] as possible. The [very] concept of it involves a contradiction, since the es sential character of matter is lifelessness, [in Latin] *inertia*." (Kant (1987), *CJ*, AA 5:394). "The possibility of natural science proper rests entirely upon the law of inertia […]. The opposite of this, and therefore the death of all natural philos ophy, would be hylozoism." (Kant, *MFNS*, AA 4:544).

norm or reason; instead it articulates a temporal relation of the subject's states." It "characterizes the subject as temporally located, and as active within time, as part of the empirical world and the efficient causal nexus of appearances." (271) While purposiveness is an analogy we "project" onto organisms, it is *actual* in subjective judging. Moreover, it is actual in a sense that discriminates the nature of subjectivity: what is at stake in this form of judging is "not the logical subject of experience or judg ment, not the noumenal, unknown metaphysical subject, but *this* tem poral, feeling subject." (276) The irrevocably first person singularity of judging has features of authenticity, of "mineness" (277), that Zuckert sees pointing forward to such post Kantians as Kierkegaard and Heideg ger.

Such a reconceptualization of subjectivity cannot leave the notion of objectivity unaltered.[10] It is a central problem of the critical system to establish what objectivity is. Does it derive from lawfulness (objective *validity*), or does it have a stubborn component of *materiality* (objective *actuality*)? And if the answer be, glibly, "both," how are they recon ciled? That is, I presume, the central problem of the transcendental de duction of the first *Critique*. My question is whether that whole appara tus can remain unaltered in light of Zuckert's reconstruction of the ac tivity of judging. She thinks so; for her, reflective judging complements and enables determinant judging. Empirical knowledge is the essential issue in Kant's formulation of the problem of "reflective judging," since it has, as its purpose, enabling empirical concept formation and therewith the formulation and systematization of "empirical laws." Zuckert calls this "logical purposiveness," and it is one of the most use ful discussions in her text as regards philosophy of science. She suggests that Kant believed "the activity of concept formation to be (proto) dis junctive in form, viz., we take particulars as disjuncts under a prospec tive, not yet explicitly formulated concept." (47) Once we *have* a for mulated empirical concept, we can then apply it, under the further con straints of the categorial rules ("schematic determinant judgments" which, Kant asserted, establish the "analytic unity" of experience), in "empirical determinant judgments."[11] Not only does reflective judging

10 For an extended historical critical discussion of this very problem, see Daston and Galison (2007).

11 Zuckert's discussion of "empirical determinant judgments" and "judgments of experience," as invoking a priori rules but not entirely constituted by them, seems to me a rich vein for further elaboration.

work toward such a conceptual scheme but it constantly challenges every concrete imposition of such a scheme ("empirical determinant judgment" or the system of such empirical determinant judgments as a hierarchical set of "laws") by suggesting alternative constructions. (76, 347, 352).

Zuckert wants to justify "the ability to be anticipatory, or future di rected, imaginatively to project a systematically unified, diversified whole" (85) as an essential feature of "*human* knowledge as such." (11) She recognizes that this "non conceptually guided future directed ness" (85) is something distinctly absent from Kant's earlier formulation of knowledge generation, which dramatically enhances (or transforms) his whole conceptualization of cognitive activity, because it *cannot* be "domesticated" into his system (271 6). Her ultimate point is that when we have unpacked this new theory, Kant will himself have under mined his "discursive" restrictions: "our abilities to judge purposively without a purpose transcend the *discursivity* of our intellects." (168n) The "theory of 'intellectualized sensibility' in the form of the purposive free imagination" (383) opens the way to post Kantian Idealism and to the theories of subjectivity in Kierkegaard and Heidegger. Zuckert ar gues that the *CJ* represents "a turning point, within Kant's own philos ophy, towards Idealist and other rejections of the limits of critical phi losophy." (11) She sees this practice of judging as Kant's most "transfor mative, radical" notion, "a new conception of subjectivity as self deter mining, yet temporally located and individualized through its own feel ing of its own states." (369) This, she suspects, opens out onto post Kantian possibilities, for this "temporal, teleological subjectivity as a necessary ground for empirical knowledge […] points beyond his crit ical framework." (6) It sets the *CJ* at the margin of critical idealism; it "reflects the ambition and the fault lines of the critical philosophy" (19) "at the limits of Kant's philosophy." (6) That is, the new form of judging that he discovers and articulates there "suggests that episte mology may not be the foundational discipline in philosophy, which grounds any possible metaphysical claims (as in Kant's critical view), but rather that epistemology ought itself to be grounded upon meta physical, phenomenological, historical, or pragmatic investigation of the subject." (11) Yet, cautiously, Zuckert hews close to the Kantian line in keeping this all in a largely *epistemic* key: it is all about what the mind/subject *does*, not about what it *is* that makes it possible for it to do that. She only gestures to post Kantians who dare to explore such metaphysical possibilities.

Zuckert makes the decisive historical claim that the third *Critique* is the consequence of Kant's "discovery" (236) that pleasure has an a pri ori principle; she believes there is a substantive change in Kant's views. The epicenter of this change is in the interpretation of pleasure, but it reverberates through the entire critical system. "Prior to the *CJ* Kant ap pears to hold that pleasures are sensations" (236), Zuckert argues, but Kant "changed his mind" after completing the second *Critique*. (238) Indeed, "Kant has come to a different conception not only of pleasure, but also of life, in the *CJ*." (239) Thus "aesthetic pleasure is the paradig matic pleasure on Kant's [new] account" (267), because it shows him something *transcendentally new*. She acknowledges that Kant had long worked with distinctions among forms of pleasure, but these were *em-pirical-psychological* distinctions, not *transcendental* ones, until he came to his new view. This persuasive claim raises two sorts of historicist ques tions. First, what is the place of developmental change in the philosoph ical reconstruction of Kant's system? That is, do Kant's changes not imply substantial *revision* of claims made earlier, above all in the first *Cri-tique?* Do his new thoughts merely "supplement" his old ones, or do they in fact displace them? Can they all belong together in happy sys tematicity? Kant himself worried about a "gap" in his system; his suc cessors made this their mantra.[12] Were they misguided? Does "charita ble" philosophical reconstruction not imperil the authenticity of histor ical reconstruction: are we not fashioning a Kant who was never so co herent? When is "charity" just another word for "strong misreading?" And is that what history of philosophy is supposed to do? I am not sug gesting that Zuckert is particularly at fault in this regard, but she is ex tremely cautious about the retrospective implications of her reconstruc tion of the third *Critique*, insisting simply on supplementation and im provement, but not except in regards to pleasure displacement. Was nothing lost with something gained? On the one hand, she seems to suggest that such judging can only operate at least as an em pirical practice *within* the determinate structure of an efficiently caus al, temporally unidirectional world. (297) On the other, she is clear that at least as aesthetic judging Kant cannot "domesticate" this ca pacity. (272, 276) If we take her at her word that reflective judging en ables empirical knowledge that is, constitutes a *necessary presupposition for its possibility* (347), as she understands an a priori principle of transcen dental philosophy to entail then there is reason to suspect that the crit

12 Förster (1987), Tuschling (1991).

ical system needs to be significantly reformulated, and that precisely the schematic requirements of efficient causality and temporal unidirection ality might be imperiled in the process.

Second, there arises the question of "internal" versus "external" ac counts of change, a perennial issue in the history and philosophy of sci ence.[13] Zuckert is quite firmly "internalist," wishing to understand all change in Kant's positions as immanently grounded in philosophical considerations alone. When she mentions contextual considerations, es pecially with regard to developments in the life sciences (91n), she sug gests that these are largely immaterial.[14] But should they have been? I do not mean that we should simply displace "internalist" by "externalist" accounts: one sidedness leads to short sightedness in the history of phi losophy generally and *a fortiori* in Kant studies. Zuckert contends that Kant's *CTJ* is a means, not an end in itself, for Kant, and biology was *not*, as such, that important for him. Yet it *was* important for his times. Kant knew this, and it might well have deserved more impor tance in Kant's reflections on his system than he or Zuckert acknowl edge.[15]

I want to suggest that the aporias of Kant's theory of "natural pur pose" as much as his breakthroughs in characterizing aesthetic experi ence led his successors to a far richer, far more immanent theory of cau sation (anticipated philosophically, as they recognized, by Spinoza and Leibniz), which they could impute to nature itself, and thus suggest dy namic unities that dramatically exceeded Kant's critical strictures. Sim ilarly, his thoughts on genius in the creation of works of art that *nature* "gives the rule" to art, that genius is a "talent," an endowment of na ture become the common ground of Idealism and Romanticism. These can be understood as reconstructing that "capacity hidden deep within the soul" which is productive imagination.[16] That way leads,

13 For a useful characterization of this theme in science studies, see Shapin (1992).

14 She points especially to Sloan (2002), but there is a more substantial literature on this question. See Huneman (ed. 2007), and the sources there cited.

15 "Kant regulative doctrine was *not* the foundation of empirical science in the late eighteenth and early nineteenth century; rather it was completely at odds with it. It is striking that virtually all the notable German physiologists and biologists of the late eighteenth and early nineteenth centuries conceived of their vital powers as causal agents rather than regulative principles." (Beiser 2002, 508).

16 This is why Zuckert might have profited from a more extensive consideration of Kant's discussion of the creation of beautiful objects. One other feature that this would have elucidated further is the relation of imagination to reflective

via Schlegel, Novalis and Schelling to Kierkegaard, to Nietzsche and to Heidegger. But there is another way of trying to grasp this immanent, natural creativity: it leads, I submit, via *Naturphilosophie* to the science and philosophy of biology ultimately to a naturalist evolutionary epis temology in which even human mind is a product and process of na ture.[17]

Zuckert is not primarily interested in biology; she is interested in mental process. But if it is transcendentally characterizable in terms of purposiveness, might not this imply a kind of agency actually in this world? In short, I suggest, might we not invert Kant's inversion? What if intrinsic purposiveness were *actual* in the order of empirical na ture? The empirical subject is a situated, embodied dare I say an *organ-ismic* actuality. Strikingly, while Zuckert mentions "embodiment" once, in a footnote reference to the work of Susan Shell (285n), she does not make more of this aspect of individuality.[18] For Zuckert, that Kant in the Appendix to the *CPR* characterized reason via an anal ogy to organism was merely *metaphorical* (92).[19] But what if, against Kant and from a naturalist stance, *organism* simply betokens that is, can be intersubjectively, empirically discerned to have as its properties those propensities of systemic, open ended dynamism we characterize as in trinsic purposiveness? What if for empirical judgment humans are *first* such organisms, and *consequently* (empirically and logically) capable of judging? Then Kant's characterization of reason is *not* just a metaphor: it parallels organismic form because it *is* an expression of organismic function. For empirical biological science and its knowledge claims, hu

judging, especially as to the question of the intentional state and "principled" character of the latter *vis à vis* the former. For a programmatic statement of these issue for the history of philosophy, see Zammito (2004).

17 For a clear recognition of this affinity (if not trajectory), see Beiser (2002, esp. 511). For constructive, historically cogent considerations of *Naturphiloso phie*, see Gloy and Burger (eds. 1993), Bach and Breidbach (eds. 2005), and Stein (2004). For contemporary naturalist and evolutionary epistemology, see Callebaut (1993), Shimony, and Nails (eds. 1987), Callebaut, and Pinxten (eds. 1987), Rescher (ed. 1990).

18 See Shell (1996).

19 Kant wrote, in the Appendix to the *CPR:* "The whole is thus an organised unity (*articulatio*), and not an aggregate (*coacervatio*). It may grow from within (*per intususceptionem*), but not by external addition (*per appositionem*). It is thus like an animal body, the growth of which is not by the addition of a new mem ber, but by the rendering of each member, without change of proportion, stronger and more effective for its purposes." (*CPR*, A833/B861).

mans are products of nature, whose process of judging is an instance and extension of that process already actual in organisms.

2. Intrinsic Purposiveness and the Science of Biology

"Biologists not only do, but must employ the concept of a natural pur pose in their investigation of organisms," Zuckert affirms on Kant's be half (2). But that isn't quite right. First, they simply employ the theoret ical term *organism* and it is Kant who glosses this as "the concept of a natural purpose." To characterize their object of inquiry, empirical bi ologists must consider processes of intrinsic dynamism, and *organism* has long been their master concept for such inquiry.[20] *Function* is a more re cent term for such processes, but even it has not escaped the question of the place of teleology in a (proper) science of biology.[21] Second, if bi ologists not only do but must use this concept of *organism*, then it seems an essential feature of their science.[22] To suggest that this is only a "sub jective necessity" with no real scientific status, as Kant does in the *CJ*, raises a central question about the warrant and scope of philosophy of science. Is its task to *prescribe* or to *elucidate* scientific practice?[23] Despite Zuckert's charitable reconstruction, in short, I think Kant's assertions that judgments entailing organic form are perhaps subjectively necessary but of no status at all for science simply *are* "dogmatic or definitional" (135).

From the vantage of biology and its philosophy, a central issue with regard to Kant's position and Zuckert's reconstruction, is his notion of "life." When Kant proposed analogies whereby to construe the anom alous character of organisms (or "natural purposes"), he suggested that

20 The concept of organism received its original elaboration by Aristotle, but it came to decisive reformulations in the eighteenth century by figures like Locke, Leibniz, Stahl, Buffon and Haller, before being taken up by Kant. For the historical background, see Huneman (2002). For a contemporary dis cussion, see Gutmann et al., (eds. 2000).

21 See Mayr (1992), Godfrey Smith (1993), Allen et al. (eds. 1998), McLaughlin (2001), Lewens (2001), (2004), Walsh (1996), (2006), and Zammito (2006).

22 See Quarfood (2004), which recognizes that for the science of biology the idea of organism must be constitutive, not regulative, yet suggests that Kant may still be warranted at a meta level, qua transcendental philosopher, to regard it as merely regulative.

23 I take this to be a central element in the challenge of post positivism to the "Received View" in philosophy of science. See Zammito (2004).

perhaps an "analogy to life" would be most pertinent.[24] This ought to be quite perplexing to us, for life is what we think is at stake in organisms. But "life" has a technical sense for Kant that is not so easily assimilated to our common understanding.[25] Zuckert is aware of this, but I don't think she recognizes the full implications. For herself, Zuckert writes: "life may be understood as the purposive functioning of an organism to maintain the dynamic state that it is in; pleasure […] is the consciousness of just such a state, a state of dynamic self preservation." (235) That is, "though Kant does not so claim, this temporal structure of internal, an ticipatory, reciprocal means ends relations is also […] a good character ization of life." (125) In her discussion of Kant's passage on the "analogy to life," she writes: "These claims have an obvious limitation: though they may include animals in the category of the living (their behavior is understood as caused by pain, pleasure, or 'pathological' desire), they do not apply easily to plants […] Kant's use of a tree in the *CTJ* as a central example suggests though Kant does not so claim that with the concept of natural purpose Kant articulates a more inclusive

24 Kant, *CJ*, AA 5:374.

25 Of the many statements Kant made about life, a good starting point is from his *Critique of Practical Reason:* "Life is the power of a being to act in accordance with the laws of the faculty of desire." (Kant, AA 5:9n). The faculty of desire, in turn, is the power "to be through its representations the cause of the actuality of these representations." (Ibid.). No one can miss the parallel between this def inition of the faculty of desire and Kant's definition, in the *CJ,* of the key term *purpose.* Thus the question of the actuality (or actualization) of the object through a purpose or the faculty of desire entails a theoretical component. In his early *Träume eines Geistersehers* (1766), Kant wrote: "all life consists in the inner capacity of self determination according to free choice [*Willkür*]." (AA 2:327). In his *Reflexionen* Kant observed: "life is nothing but faculty of desire in its minimal exertion [*in der geringsten Ausübung*]." (Kant, AA 15: 465). In his *Opus postumum*, Kant wrote: "life in the strictest meaning of the term is the capacity of spontaneity of a physical entity to act in accordance with certain of its own representations." (AA 20:566). In *MFNS*, Kant writes: "From the very concept of inertia as mere lifelessness there follows of itself the fact that inertia does not signify a positive effort of something to maintain its state. Only living things are called inert in this latter sense, inasmuch as they have a representation of another state which they abhor and strive against with all their power." (AA 4:544). In his metaphysics lectures, Kant was more explicit than he permitted himself to be in the third *Critique:* "all matter that is animate has an inner principle which is separated from the object of outer sense, and is an object of inner sense […]. Thus, all matter which lives is alive not as matter but rather has a principle of life and is animated. But to the extent matter is ani mated, to that extent it is *ensouled*." (AA 28:275).

(and perhaps less metaphysically problematic) conception of life." (100n) With Hans Werner Ingensiep, however, I think that in fact Kant creates serious incongruities for his system in just this context.[26] The *only* internal or intrinsic purposiveness Kant will posit as actual is within human agency. The notion "end in itself" is the most important formulation in Kant of the notion of intrinsic purposiveness and even then, only in the "idea" in his technical sense.[27] Because he does *not* abandon his "idea" of life, which, taken literally, would restrict it entirely to rational agency, he makes its extension to organisms problematic in just the way he wishes to uphold for the "idea" of natural purpose itself. That is why, in the *CJ*, life can only be an "analogy" for organism. This is to render biology as an empirical science of life impossible *by definition*.

How should we conceive of the practices of natural science? Kant claims that we must "regard nature a priori as characterized by a *logical system* of its diversity under empirical laws" (Kant, *First Introduction*, AA 20:214, cited 52). Yet, at the same time, Zuckert insists, Kant is mindful that we must "allow the empirically given in sensibility to *constrain* our logical classifications" (55). In more current terms, natural science is a *language* or "conceptual scheme" which we impute to actual nature. It may only fit loosely, but it must be possible for nature to *reject* the fit, at least in some places. These are live issues in the philosophy of science and in the contested construal of "constructivism." Willard van Orman Quine, among others, made it central to contemporary philosophy of language and science.[28] Thus Zuckert makes a most apt point: "A full account concerning how empirical, diverse properties of objects become salient, or for what reasons, would probably include a discussion of the role of language." (356n) That is, indeed, a central preoccupation of contemporary philosophy of science and of science studies more generally, which does not leave to philosophy alone the investigation of this

26 See Ingensiep (2004). See also Ingensiep (1996), Löw (1980), Rheinberger (1981), (1986), Zumbach (1984), McLaughlin (1990).

27 In his most forthright discussion, in *Groundwork of the Metaphysics of Morals*, Kant uses formulations which always make the idea of an end in itself speculative, not constative: "*But let us suppose that there were something* whose existence has in itself an absolute worth, something which as an end in itself could be a ground of determinate laws. In it, and in it alone, would there be the ground of a possible categorical imperative […]." (AA 4:428; my emphasis).

28 Quine (1969). On Quine and post positivist philosophy of science, see Zammito (2004, 15–51).

accounting.[29] In the measure that empirical science is about the world, not simply our language game as radical constructivists would have it, it must be open to nature's constraint and thus to self revision. From a naturalist vantage, when it is possible for a scientific community to es tablish to its intersubjective satisfaction that properties in the empirical order fall into a pattern such that an object or set of objects is held to have a discernible character, then *that* constitutes the kind of knowl edge claim that philosophy of science ought to be in the business of ex plicating.[30] Such knowledge claims are indeed contingent and fallible; more, they are constrained by the conventions of the community of in quiry, the available evidence, instruments, and theories, and by the wider social orientation to scientific knowledge.[31] No less than Kant, a naturalist is concerned with the "limits of human understanding," but those limits apply across the board in empirical science; biology is not uniquely disqualified. That is, *all* natural science may ultimately need to be taken to be empirical in the radical sense of "reflective" or "regulative" judgments; biology does not warrant special targeting. We need to bring these general considerations of science and its philos ophy back to the specific issue of biology for Kant.

Kant conceived *two* levels of natural teleology a general level (the "order of nature" as a whole) and the individual level of organisms or species. The notion of teleological judgment of nature as a whole (as a system of purposes) long motivated Kant's thinking as "a heuristic ver sion of the seventeenth century deistic model of nature" (94).[32] Indeed, "Kant closely connects natural teleology to the systematic unity of sci ence and nature even in the *CPR*" (90), especially its Appendix. But there is something else at stake in the *CTJ*. This "'teleological way of

29 On science studies, see Biagioli (1999), Golinski (1998), Galison, and Stump (eds. 1996).

30 On Naturalism, see Kitcher (1992), Kornblith (ed. 1994), and French et al. (eds. 1994). There has recently been a strong reaction against naturalism. Three presidents of the American Philosophical Association used their presi dential lectures to attack it: Stroud (1996), Friedman (1997), Allison (1997). They have been seconded by some important new anthologies: Wagner, and Warner (eds. 1993), Craig and Moreland (eds. 2000), and Caro, and Macarthur (eds. 2004). For one rejoinder from the naturalist camp, see: Kornblith (1995). See Zammito (forthcoming 2008).

31 On post positivist philosophy of science see especially Longino (1990), (2002); see Solomon and Richardson (2005).

32 See Kant (1992, 107–202): *The Only Possible Argument in Support of a Demon stration of the Existence of God* (1763).

judging,' Kant writes, applies only to a 'special class' of natural objects." (AA 5:383, cited 94) "Kant's claims in the *CTJ* are […] narrower than those in the Appendix, but they are also stronger." (95) The particular conception of natural purpose is in fact more demanding in formulation than the general one. The key feature of Kant's particular form of nat ural purpose is the mutual constitution of parts and whole.[33] In teleolog ical judgment of a particular organism, as Kant conceived it, we articu late "a form of means ends relations holding among parts *as* diverse and contingent, which are made possible by a temporal structure of future relatedness" (20), and we affirm this of a determinate empirical object.

Zuckert notes that in Kant's construction, teleological judgment is "a strange, perhaps unique, form of judging." (143) He implies it may be a misunderstanding: in transcendental language, a "dialectical" error of "subreption."[34] Zuckert finds it odd that Kant justifies the "au tonomy of teleological judgment in biology within natural science" (89). But that is simply because it is *not* within natural science for Kant: it is "outside the concept of nature, not within it." (AA 5:360, cited 96) That is the real provocation in Kant's famous comment that there would never be a Newton of the blade of grass, namely that biol ogy can never become part of an authentic physical mechanical order of nature (or science).[35] Kant was committed to a mechanist ap proach to science, even in biology.[36] Zuckert does a heroic job of ex plicating how for Kant biology, though it literally *cannot* (AA 5:409), must nonetheless try to develop mechanical laws:

> We may never, in other words, be able to formulate a set of simple, basic, universal, mechanical laws that govern the heterogeneity and multiplicity of organic functions, as Newton had done for physics, but instead only

33 Kant, *CJ*, AA 373–4.

34 Kant's technical term "subreption" entails the misapplication of a concept or judgment by the human subject, largely because of intervening interests of rea son or desire. Kant: *Inaugural Dissertation*, AA 2:412. See the discussion in Kant: *First Introduction*, AA 20:243.

35 Kant, *CJ*, AA 5:400; and see Kant, *MFNS:* "Only that whose certainty is apo deictic can be called science proper; cognition that can contain merely empiri cal certainty is only improperly called science […]. When these grounds or principles are ultimately merely empirical, […] they carry with themselves no consciousness of their necessity (are not apodeictically certain) and thus the whole does not in a strict sense deserve the name of science." (AA 4:468). "I maintain […] that in every special doctrine of nature only so much science proper can be found as there is mathematics in it." (AA 4:470).

36 Kant, *CJ*, AA 5:417.

> (at best) a plethora of particular mechanical laws governing particular inter actions among organic parts. But those mechanical laws—even if not uni fied and elegant—will be the only laws we will ever know concerning or ganisms. (165).

That *is* what Kant claimed; the point is, from the vantage of contempo rary biology and its philosophy it is not clear he was *right* to.[37]

Purposiveness is attributed or projected because, of course, by Kant's *definitions,* "*any* purposiveness in nature is purposiveness without a pur pose, for non human nature does not act in accord with conceptual in tentions" (80). But why should we privilege Kant's terminological def initions rather than the distinctive empirical features of nature they are meant to "analogize?" There is the objection that we really *can't* discern intrinsic purposiveness: "We do not, Kant argues, find that any organ ism's existence is identifiable as an end in itself." (373) That is, "it is only our inability to understand this internal purposiveness that leads us to consider them in the terms of design, God, and final, external purpose" (165n). Zuckert elaborates: "we do not have a concept that determines the single identifiable end (purpose) of the organism independently of the functioning of the parts in concert with one another" (166). When it comes to intrinsic purposiveness, we are left with "a 'boot strapping' consideration of [one] part in reciprocal purposive relations to other parts and functions" (167). That is, she echoes Kant, a "subjec tive necessity" of our cognitive process.

I want to problematize all these notions, and therewith Kant's whole "domestication" strategy, as a misplaced inversion. From a naturalist perspective, the status of "organism," as an object of empirical scientific inquiry, is not ontologically inferior to, say, that of quarks or "strings." Fear of "theoretical terms" is a residue of positivist skepticism that we need to get past. Moreover, for naturalism, bootstrapping just *is* empiri cal learning. As Thomas Nickles puts it, "a defensible historicism does not rule out a bootstrap account of the development of knowledge;

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37 I am referring here to "post Synthesis" biology and its philosophy. The grand exponent of "Synthesis" biology (i. e., of Darwinian natural selection plus pop ulation genetics), was Ernst Mayr. See Mayr and Provine (eds. 1980), Mayr (1982), (1988). On the philosophical and socio cultural aspects of this "synthe sis" stance in modern biology, see Smocovitis (1996). Two excellent accounts of the philosophical challenges to this synthesis are Burian (1988), and Gayon (1989). For a brilliant exemplar of post Synthesis history and philosophy of sci ence, see Amundson (2005). See also Depew, and Weber (eds. 1985), Depew, and Weber (1997), Grene, and Depew (2004).

on the contrary, it requires it!"[38] And claims to knowledge can survive the want of transcendental warrant.[39] Maybe reflective judging is all we *have* in empirical science, but it may also be all we *need*, and the whole transcendental warrant for determinant judgment that Kant proposed is now redundant.[40]

In any event, I fail to see that Kant has established that intrinsic pur posiveness is so opaque to empirical inquiry. Zuckert acknowleges that ordinary people (and biologists *a fortiori*) quite clearly discern in organ isms "stronger identity and unity conditions than those that govern ma terial objects as such" (109), and they do so routinely because such ob jects are "commonplace" *in the order of nature*. That is, "organic objects seem, by contrast to material objects as such, to be identifiable non ar bitrarily as single, unified objects (or a unified, dynamic set of activities), or closed systems" (108). And thus,

> […] these internal temporal relations characterize, finally, the 'special' unity of the organism, as Kant initially identifies it: in growth, plasticity, and self maintenance, the parts of an organism 'anticipate' the future needs of the organism as a whole, providing different parts (of particular characters) be cause they will have useful effects for the whole, adjusting their functioning towards (future) equilibrium, etc. […]." (125).

In short, "the purposive functioning of an organism is not an externally related series of events, but an internally future directed, interdependent system of dynamic relations" (125).

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38 Nickles (1992, 116). On "bootstrapping" and naturalist epistemology, see Briskman (1977), and Axtell (1992).

39 That is what I take Quine to be suggesting with naturalist epistemology: Quine (1969, 69–90). As Philip Kitcher has observed, naturalists have concluded "the failure of appeals to conceptual truth, to analyticity, is fully general." Accord ingly, "virtually nothing is knowable *a priori*, and, in particular, no epistemolog ical principle is knowable *a priori*." (Kitcher, 1992, 72, 63). For an elaboration of these implications, see, e. g., Shapere (1984), Nickles (1980), (1992), Paller (1986). See also Rouse (1996), (1996a), (2002).

40 Ronald Giere stated the position bluntly: "[M]ethodological foundationalism is a hopeless program and thus […] naturalism, in spite of the circle argument, is our only alternative." (Giere, 1985, 336). On the other hand, Graciela de Pier ris has made a strong distinction between Kant's "constitutive *a priori*" and Des cartes's "foundationalism" in Pierris (1992). Perhaps the most energetic endeav or along these lines is Friedman (2001). But natural science not only need not require "foundationalism," even the idea of a "constitutive a priori" as its log ical core may be more than can be established or required. On the whole issue see: Hanson, and Hunter (eds. 1992), and Boghossian, and Peacocke (eds. 2000), Hanna (2001), (2006).

My point is that we must be able to discern such features empirically or the anomaly they present relative to simply material objects would never have arisen. Zuckert several times refers to Charles Taylor's *The Explanation of Behaviour* as a perspicuous characterization of these features (108, 118). And yet, she follows Kant's program that these are all ultimately mere *projections*. They don't *really* have to do with something in the order of nature, but only with our way of judging. This is orthodox Kantianism, to be sure, but I dispute its right to characterize biological discernment as "projection" in contrast with all other ("mechanistic") recognition in empirical scientific inquiry as "knowledge" (as Kant would have it).

Intrinsic purposiveness is as empirically real as any other well founded phenomenon in our world. Those perspicuous features that we all discern in organisms in fact cannot be "reduced" or "domesticated" to mechanism, even on Kant's account. If organisms do not fit within Kant's categorial scheme, it is not clear that their actuality in nature must yield to revision, to "reduction" or "domestication." It is not organisms that need to be "domesticated" to Kant's system of science, but Kant's system of science that needs to be "domesticated" to the actuality of nature: the very "constraint" that Zuckert insists the world *must*, even for Kant, exercise upon our logical construals. Thus I take very seriously Paul Guyer's suggestion that starting with the *CJ* Kant found himself driven to loosen his stipulation that mechanical explanation (in his precise sense) was *obligatory* for natural science (130n).[41] Indeed, I find this one of the most salient *historical* turns in Kant's philosophy, and one pregnant with the future in both philosophy and biology. Intrinsic purposiveness — what Kant discerned but then "domesticated" into the language of intentional action — is the starting point of actual biological science and ultimately of a naturalist philosophy of mind. And that is what, much to Kant's chagrin, his successors read out of the *CJ:* the prospect of "a daring adventure of reason."[42]

41 See Guyer (2005, 86–111).

42 Kant, *CJ*, AA 5:419n. See Huneman (2006), (2006a), Sloan (2006). Robert Richards puts it succinctly: "The impact of Kant's *Kritik der Urteilskraft* on the disciplines of biology has, I believe, been radically misunderstood by many contemporary historians. […] Those biologists who found something congenial in Kant's third *Critique* either misunderstood his project (Blumenbach and Goethe) or reconstructed certain ideas to have very different consequences from those Kant originally intended (Kielmeyer and Schelling)." (Richards, 2002, 229) See also Richards (2000), and Zammito (2003).

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An Annotated Bibliography to Kant's Teleology

Wiebke Henning

1. Commentary

The aim of this annotated bibliography is to give an overview of liter ature on Kant's teleology. Its grouping of titles is mainly chronological, though monographs which stand not only in a temporal but also in sys tematic proximity to the topic are considered together. Looking at the literature on Kant, the following commentary, of course, cannot be complete. Instead, it will exclusively concentrate on monographs that deal with the Kantian theory of teleology in the *Critique of the Power of Judgment*.[1] Monographs that deal with this topic in a section or sub section as well as most of the articles related to this topic cannot be dis cussed here in detail. Hence, this bibliography is meant to give some orientation, rather than a detailed review.

The first wave[2] of discussions of Kant's conception of teleology oc curs in the Neo Kantian period of the late 19th century until about 1924. The authors of this time typically connect Kant's teleology as a philosophy of the organic with later theories in biology, like Darwin's theory of evolution. This can be seen in the work of August Stadler (1912): *Kants Teleologie und ihre erkenntnistheoretische Bedeutung* (Kant's Teleology and its Epistemological Significance [a. t.[3]]). He bases his analysis on the concept, the comprehension, and the possibility of na ture. In this respect, he distinguishes the formal from the material aspect, i. e., law as the formal and appearance as the material aspect, that is, he analyzes the transfer from general laws of nature to appearances of em pirical cognition. Thus, he scrutinizes the principle of formal purposive

1 In my translation of Kantian terms, I follow Paul Guyer's 2000 edition of the *Critique of the Power of Judgment* with Cambridge University Press.

2 Here I do not mean the continuative discussions of Kant's teleology in German Idealism because the idealists rather develop theories of their own than inter pretations. For secondary literature on the reception of Kant's teleology in Ger man Idealism see below.

3 A. t. = author's translation.

ness with regard to the particular laws of nature and to empirical re search. In doing so, Stadler wants to show to what extent the principle of formal purposiveness matters for a theory of science. He also relates his interpretation to Darwin. The last chapter of his book deals with the principle of objective purposiveness. Stadler criticizes Kant's insuffi cient study of the three steps of natural purposiveness and completes this analysis.

According to Arthur Drews' *Kants Naturphilosophie als Grundlage seines Systems* (1894, Kant's philosophy of nature as a foundation of his system [a. t.]), even Kant's epistemology was a result of his interests in the philosophy of nature. He claims that by means of theoretical phi losophy Kant was mainly a philosopher of nature. His main interest is the substance of matter and the existence of an objective purposive syn thesis. Drews argues against the mechanistic causal interpretation of the *Critique of the Power of Teleological Judgment*, as Kant sees the correct re lation between mechanism and teleology by interpreting matter as dy namic (cf. Drews, 1894, 428 433). He criticizes that in his time the order of individual knowledge is missing, although the specification in individual sciences demands unity.

Another example is Emil Ungerer's *Die Teleologie Kants und ihre Bedeutung für die Logik der Biologie* (1922, Kant's Teleology and its Meaning for Logic of Biology [a. t.]). The title already indicates that Ungerer's main interest lies in philosophy of science, which is typical for most of the Neo Kantians. He sees the main issue of Kant's teleology in the organization of the living, not in its metaphysical aim. Ungerer's main goal is to elaborate the system of orders in the *Critique of the Power of Judgment* as components of a logic of biology. He sees the third *Critique* mainly as a grounding for such a logic of biology. He es pecially tries to relate the purpose of nature as a holistic concept to bio logical doctrines. Furthermore, he favors a logical and systematic, not a historical or critical, analysis of Kant's account. According to this anal ysis, the concept of purposiveness in the third *Critique* has got several meanings, which Ungerer demonstrates, and whose meaning for the doctrine of the natural orders of the living he determines.

In this line is also Karl Roretz and his work *Zur Analyse von Kants Philosophie des Organischen* (1922, On the analysis of Kant's philosophy of the organic [a. t.]). Roretz uses 18th century biology in order to find further explanations of Kant's theory and confronts it with his pres ent day knowledge. Like some others, he sees in the Kantian philosophy of nature already an early version of the theory of evolution. Further

more, he stresses that Kant was one of the first to speak of an epigenetic theory while denying the doctrine of preformation, although he is not consequent in this. He interprets Kant as a supporter of naturalism. The principle of teleology is spiritualistic metaphysical in one line with Leib niz and Wolff and covers the philosophy of the organic. Thus, Roretz (like Ungerer) is one of the few Neo Kantians who do not interpret the Kantian philosophy of the organic from a mechanistic point of view, but rather stress the unifying function of Kant's teleology.

James Tufts places his interpretation of Kant's teleology in a histor ical context. In his *The sources and Development of Kant's Teleology* (1892) he, first, traces the history of teleology from Descartes to Newton, Leib niz, and Maupertius. The book's second and third chapters discuss Kant's conception of teleology in his pre critical period. Finally, the fourth chapter is about teleology in his critical philosophy. In the course of this survey, he shows the development of Kant's teleology in accord ance with the critical method. His focus lies here on the mediating func tion of the third *Critique*. According to Tufts, in the case of formal pur posiveness the third *Critique* bears a new use of criticism:

> The *Critique of Judgment* is then no mediating work in the sense that it re tracts or comprises any of the results of the former *Critiques*. If it mediates it is because it carries the principles of the first *Critique* farther, so emphasizing some principles there alluded to but not developed, and, in the case of for mal purposiveness especially, discovering a new application for the princi ple of criticism. (Tufts, 1892, 47).

A higher point of view on and unity in Kant's theory as a whole is gained by this extension. In this way, Tufts sees Kant ahead of the ideal ists[4] whose theories could not reach such a unity.[5]

A historical interpretation is also given by Major (1897, *The Principle of Teleology in the Critical Philosophy of Kant*), who aims to show that Kant first only planned two *Critiques*, but later needed *a priori* principles for a new faculty of feeling. According to this view, both the critique of aesthetic as well as of teleological judgment focus on the notion of pur posiveness or design. Systematically, he interprets the principle of tele ology as a means of mediating the modes of thought concerning free dom and nature. According to Major, the new development of

4 For further interpretations in relation to the German Idealists see Baum (1990), Chierghin (1990), Düsing (1985), (1990), Fellbaum (2005), Lamb (1987), Pleines (1991), Rinaldi (2005), Stanguennec (1990), Wahsner (2006).

5 On the unifying function of teleology for reason see Freudiger (1996).

Kant's theory requires teleology to be part of the categories of pure un derstanding, but the system established in the first *Critique* forced him not to integrate it:

> Kant, following the cue he had taken from formal logic, supposed that he had found a complete list of the possible ways in which the pure under standing manifests itself in the complex of experience. He could not admit a new category without disturbing the table already established; and, what was more serious than the mere interference with the formal symmetry of his scheme, the admission of a new category would have ne cessitated a reconstruction of his theory of knowledge (Major, 1897, 99).

But since the principle of purposiveness is necessary to understand the world and assuming a divine purpose is necessary for the legitimation of moral, Major concludes that teleology belongs to the concepts of the understanding.

A further example of an evaluation in a historical context is William Chapman's *Die Teleologie Kants* (1904, Kant's Teleology [a. t.]), which also makes references to Darwin and biology. Chapman analyzes the *Critique of the Power of Judgment* in context with Kant's pre critical theo ry and Aristoteles'[6] theory of entelechy. His thesis is that Kant's theory coincides with biology if teleology is limited to inner purposiveness (cf. Chapman, 53). On the other hand, if biology is seen as a cosmic prob lem, the task of teleology is reached. Teleology is the precondition of biology. The important task here is the epistemological question about the objective justification of teleological judgments.

Paul Menzer (1911, *Kants Lehre von der Entwicklung in Natur und Geschichte*, Kant's Doctrine of Evolution in Nature and History [a. t.]) of fers a survey of the chronological and systematic connection between philosophy of nature and philosophy of history. His focus lies in the his tory of the thought of evolution.

A different perspective is taken by Otto Kohlschmidt. In his work *Kants Stellung der Teleologie und Physicotheologie* (1894, Kant's position of Teleology and Physico theology [a. t.]), the central topic is the cri tique of speculative theology.

These are just some examples of Neo Kantian works and subse quent interpretations that can still be seen in this line.[7] In the mid

6 For more details about such a comparison to Aristotle, see Ginsborg (2004) and Quarfood (2006). See also Löw (1980, 34–75), and below.

7 Some important articles from this period are Bommersheim (1919), Driesch (1924), Frost (1906), Pfannkuche (1901).

1920s, a turn in the interpretations of Kant's philosophy took place. From this time on the interest lies less on, the epistemological founda tion of the particular sciences, and more on the Kantian metaphysics.

Wundt (1924) plays an important role in this development and with respect to teleology Marc Wogau is especially important. His study *Vier Studien zu Kants Kritik der Urteilskraft* (1938, Four studies on Kant's *Critique of the Power of Judgment* [a. t.]) was first planned as a commentary, but then became a more detailed interpretation. The four studies in clude first, the concept of the reflecting power of judgment; second, constitutions and kinds of purposiveness; third, mechanism and teleol ogy, and fourth, the moral proof of the existence of god. His aim is to clarify the contents and logical conditions of Kant's doctrine. Ac cording to his interpretation, there are inner contradictions and incon sistencies in Kant's theory: The analysis of the concepts of reflexion and purposiveness shows these contradictions, which Kant was unaware of. The contradictions are already generated in the theoretic foundation by trying to bridge the gap between theoretical philosophy, or nature and practical philosophy, or freedom. This coverage is built by using the concepts of reflecting power of judgment and purposiveness, which prove to be contradictory.

A comparison with Goethe is made by Claus Günzler: *Das Teleologieproblem bei Kant und Goethe* (1964, The Problem of Teleology in Kant and Goethe [a. t.]). Since Goethe studied the third *Critique*, which in fluenced his work intensely, a comparison between Kant and Goethe is profitable. The author focuses on the problem of causation and final ity in the examination of nature by Goethe. From a methodological angle such a comparison was supposed to bring a Kantian systematic order into the unsystematic thoughts of Goethe. Based on this problem, Günzler's main interest lies in the organization of the living.

A critique of the so far predominantly naturalistic scientific interpre tation is given by Peter Baumanns. His *Das Problem der organischen Zweckmässigkeit* (1965, The proplem of organic purposiveness [a. t.]) centers Hartmann's (1951) theory of teleology in connection with Kant. According to him, the position of "never knowing" something for epistemological reasons cannot be comprehended by natural science, because natural science deals only with "not yet knowledge", that is the discovery of knowledge (cf. Baumanns, 1965, 2). Such a discussion of the limits of knowledge was initiated by Hartmann. With respect to Kant, Baumanns claims that Kant's system presupposes his theory.

Theological questions that are related to teleology are examined by Lenfers. In his *Kants Weg von der Teleologie zur Theologie: Interpretationen zu Kants Kritik der Urteilskraft* (1965, Kant's way from Teleology to Theology: Interpretations of Kant's *Critique of the Power of Judgment* [a. t.]) Lenfers shows how the theological question rises out of teleological questions. Starting from organisms, reason asks questions about knowledge of supersensible existence. Since Kant criticized transcendental proofs of the existence of god, he used teleology to open up another possibility to answer the question about a supreme being.

Klaus Düsing's *Die Teleologie in Kants Weltbegriff* (1986, Teleology in Kant's concept of world [a. t.]) also strengthens the metaphysical perspective. His analysis concerns the meaning of "world," the connection of the world of the human being to teleology, and the necessary assumption of order within the world. Düsing's thesis is that the concept of purposiveness is not limited to a certain area, like the organization of the living, but covers the whole nature or world (cf. Düsing, 1986, 10–11). In the Kantian sense, a new meaning of "world" is established, based on purposiveness *a priori*. The principle of purposiveness makes cognition of nature possible. This implies the possibility of particular cognition and empirical judgments. Furthermore, it allows for the representation of the possibility of success of moral purposes.[8]

In his 1986 dissertation *Die Vorstellung einer Selbstorganisation der Materie: Versuch einer erkenntniskritischen Wertung auf der Basis des Kantischen Teleologieverständnisses* (The representation of self organisation of matter: An essay concerning an epistemological critical evaluation on the basis of the Kantian understanding of teleology), Peter Heinen extends the Kantian teleology towards modern biology. Accordingly, the Kantian thought has influenced science, for example with respect to the use of "as if" terminology. Heinen gives a philosophical justification of these usages and a Kantian basis to his claim that teleology can be extended from living systems to dead systems of matter. According to his analysis, Kant could not combine self regulation with matter, which is why he could not treat the problem of evolution as belonging to self organization of matter. In particular, Kant's understanding of causation as determinism prevents him from seeing matter as a cause of the organic.

In his dissertation *Kants Teleologie* (1972, Kant's Teleology [a. t.]) István Hermann focuses on Kant's "dialectic." He shows how anthropology controls Kant's thought. His thesis is that the anthropological

8 See also Düsing (1981), (1985), (1990).

point of view comes to the fore to close the gap between "understand ing" and "reason." Furthermore, he places Kant's philosophy into a his torical relation to German Idealism and French Enlightenment.

Another author, Reinhard Löw, like Düsing, criticizes the fact that the previous interpretations only focus on particular paragraphs of the third *Critique*. Furthermore, in his *Philosophie des Lebendigen: Der Begriff des Organischen bei Kant, sein Grund und seine Aktualität* (1980, Philoso phy of the Living: The concept of the organic in Kant, its grounding and its actuality [a. t.]) Löw emphasizes the mutual influence of Kant and coeval natural science. He links Kant with previous and contempo rary scientific theories in order to respond to the thesis that in biological sciences only paradigm shifts take place. Instead, he argues that the his tory of biology is affected by a periodic development of two schools of thought, namely teleological and causal mechanistic thinking (cf. Löw, 13 14). In Kant's thought itself a change from a mechanistic towards a teleological thinking takes place.

In contrast to this, Peter McLaughlin claims that Kant sticks to mechanism as the only legitimate way of scientific explanation. Howev er, Kant tries to appoint teleology as a necessary, with mechanism con sistent, completion of the insufficient mechanistic explanations of or ganisms. His book *Kants Kritik der teleologischen Urteilskraft* (1989) (Eng lish version: Kant's Critique of Teleology in Biological Explanation: Antinomy and Teleology: 1990) is a systematic analysis of the relation of the *Critique of the Power of Judgment* to the *Critique of Pure Reason* and to modern biology. According to McLaughlin, Kant defines mech anism as a particular kind of causality, which is a necessary condition for scientific explanations, but not constitutive for objects of experience. Thus, materialistic reductionism is correct, but insufficient, which is why the teleological explanation must be added. McLaughlin places himself in one line with the Neo Kantians, but while the Neo Kantians see the *Critique of the Power of Judgment* as an example of the philosophy of science of descriptive and classifying sciences, McLaughlin's interpre tation is a reflexion on the analytic, causally explaining biology. His main thesis is that mechanistic explanations always entail the introduc tion of teleological explanations.[9]

Another example of an interpretation that relates Kant to modern biology is Quarfood's *Transcendental Idealism and the Organism: Essays*

9 See also McLaughlin (1990).

on Kant (2004).[10] While Quarfood's main aim is to provide an immanent interpretation of the notion of teleology, reflected on from different perspectives, he also makes connections to present day biology. His strategy is to stress different, co existing perspectives within Kant's phi losophy. Quarfood compares the Kantian concept of natural purpose to Aristotelian conceptions of teleology. He ascribes the Aristotelian onto logical theory to the object perspective of Kant's theory. This object perspective is distinguished from a meta perspective of philosophical re flection, in which teleology has not an ontological, but regulative, func tion. Quarfood also uses this thesis in another article on the antinomy of teleological judgment.[11]

John Zammito in his *The Genesis of Kant's Critique of Judgment* (1992) interprets the *Critique of the Power of Judgment* by looking at its development, the several revisions Kant made, and earlier writings on the same topic. The second part of his work turns toward the *Critique of Teleological Judgment*. Zammito's thesis is that teleology can be best un derstood as a Kantian answer to Spinozism:

> Rather, it is crucial to bring into consideration some powerful contextual forces which were driving him toward the articulation and defense of a ser ies of theological and moral commitments of a definitely metaphysical na ture. The key to Kant's metaphysical adventure in the *Critique of the Power of Judgment* is the need to respond to a powerful new metaphysical vision which was catching the imagination of Germany in the second half of the 1780 s: Spinozist pantheism (Zammito, 1992, 227).

Zammito explains how the occupation with Spinoza, Jacobi, and others made Kant change his arguments during the composing of the *Critique of the Power of Judgment*.

While many interpretations and commentaries look at a certain as pect of the *Critique of the Power of Judgment*, like its philosophical theory of biology, two recent works have to be mentioned that emphasize the unifying function of the Kantian conception of purposiveness. Angelica Nuzzo in her *Kant and the Unity of Reason* (2005) presents "an analysis, commentary, and comprehensive interpretation of Kant's *Critique of Judgment*" (ibid., xi). In the first part, Nuzzo gives an introduction to Kant's theoretical preconditions originating in his earlier writings. Here she focuses on the system of the faculties of mind. Her interpre tation of the third *Critique* presents the faculty of judgment as the crucial

10 See also Quarfood (2006).

11 Another article on the antinomy of teleological judgment is Allison (1991).

faculty to mediate between sensibility and rationality. According to Nuzzo, Kant's notion of sensibility is the central innovation of the third *Critique*, allowing for Kant's alternative to empiricism and rationalism. The second part is a detailed commentary on the 1790 published introduction to the *Critique of the Power of Judgment*. The third and last part of her book offers an analysis of the development of the argument throughout the third *Critique*.

Like Nuzzo, Rachel Zuckert in her *Kant on Beauty and Biology* (2007) offers an interpretation of the argument of the whole third *Critique* in order to give an account of its unity rather than to focus either on aesthetics or biology. Zuckert defends the principle of purposiveness without purpose as the form of unity of the diverse. She interprets purposiveness as the lawfulness of the contingent and as the principle of both aesthetic and teleological judgment.

Finally, there are, of course, several instructive commentaries on the *Critique of the Power of Judgment* to be named. First, there is H. W. Cassirer's *A Commentary on Kant's Critique of Judgment* (1938). This comment does not take the historical context into account. Instead, it interprets the text immanently. Another commentary is Delekat's *Immanuel Kant: Historisch-kritische Interpretation der Hauptschriften* (1966, Immanuel Kant: Historical critical Interpretation of the Major Writings [a. t.]), which presents an interpretation of all three *Critiques*. The most recent commentary is a cooperative one: *Immanuel Kant: Kritik der Urteilskraft* (Höffe, 2008). The *Critique of the Power of Judgment* is divided in parts, which are commented on by several authors such as H. Ginsborg, E. Watkins and K. Ameriks.

The second part of this article presents a comprehensive bibliography of writings on Kant's teleology.

2. Bibliography on Kant's Teleology

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