

Transcendental Deduction as Abduction

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Introduction

Transcendental argument: Inference to the **only possible** explanation.

Abductive reasoning: Inference to the **best explanation**.

Comparatively speaking: only possible = best (note: also the worst)

Two routes:

- ① transcendental deduction as a form of abduction (Rosenberg)
- ② pragmatist abduction as a form of transcendental deduction (Apel)

In this talk: We walk along route 1 and try to clarify the “reduction” a bit.

Contents

- 1 Transcendental Arguments
- 2 Three Main Objections
- 3 Abductive Reasoning

Transcendental Arguments

Transcendental Arguments

An example

Descartes' argument against scepticism by help of the *cogito* can be stated as a transcendental argument (cf. Stern 2000, p.58)

- ① I think.
- ② I could not think, if I were not to exist.
- ③ Hence, I exist.

Transcendental Arguments

The General Schema

- ① Y , an indisputable and immediately apparent fact about our mental life.
- ② ① Y could not be the case, if X were not the case.
 or, equivalently:
 For Y to be *possible*, X *must* be the case.
 or, equivalently:
 X is a necessary condition of the possibility of Y .
 or, equivalently:
 X is a precondition of Y .
 or, *alternatively*:
- ② The *only* reason for believing in Y is X .
- ③ Hence: X .

Transcendental Arguments

The Logical Form of Necessity-Arguments (2.1)

- ① Y
- ② $\neg X \Box \rightarrow \neg \Diamond Y$
- ③ Hence, X

Read 2: If X were not the case, then Y would be (even) not possible.

Logically valid: *Modus tollens* holds for the counterfactual $\Box \rightarrow$, T for $\Diamond$.

(Note that *contraposition* does not hold for $\Box \rightarrow$.)

Transcendental Arguments

What is the logical form of a transcendental argument with 2.2?

How to interpret 'the only reason'?

Wilkerson (1976, p.204) discusses the following suggestion:

"[W]hen a sentence of the form '[X] is a necessary condition of [Y]' occurs in a transcendental argument it means (i) that [X] is sufficient for [Y] (ceteris paribus) and (ii) that we cannot conceive of any other conditions that would be sufficient for [Y]."

We will call (i) the *existence condition* and (ii) the *uniqueness condition*.

Transcendental Arguments

Let:

- $\Rightarrow$ be a short form for *explaining*
- $\Box$ be a short form for *conceivability*
- $\vdash$ be a short form for (explanatory) equivalence

The Logical Form of Only-Arguments (2.2)

- 1 Y
- 2 $\underbrace{\Box(X \Rightarrow Y)}_{\text{existence}} \ \& \ \underbrace{\text{for all } Z(\Box(Z \Rightarrow Y) \rightarrow Z \vdash X)}_{\text{uniqueness}}$
- 3 Hence, X

Logically *invalid*: Is more like *affirming the consequent*.

Transcendental Arguments

Transcendental **necessity**-arguments are simply a species of (modal-/counterfactual) arguments which are **valid**.

Transcendental **only**-arguments are in need of **justification**.

We will do so by characterising them as *abductive inferences*.

However, let us first put forward some common objections.

Three Main Objections

Three Main Objections

Basically, the main line of critique can be split up into three kinds of objections (cf. Vahid 2006, p.276; Bardon 2012):

- i the *modal objection*
- ii the *verificationism objection*
- iii the *uniqueness objection*

The Modal Objection

The modal objection questions the cognisance of the modality: $\square$

Where does it come from? What is it about?

Strawson (cf. 1966, p.44):

- “Kant’s Copernican theory was an attempt to explain [the] status [of the *synthetic a priori*].”
- “Is it not, after all, easy to read the very formulation of the programme – ‘the determination of the fundamental general structure of any conception of experience such as we can make intelligible to ourselves’ – in such a way as to suggest the Kantian-seeming thought that any *necessary limits* we find in such a conception are limits imposed by *our* capacities?”
- “To this I can only reply that I see *no* reason why any high doctrine at all should be *necessary* here.”
- “[Such principles are] not static schemes, but allow of that indefinite refinement, correction, and extension which accompany the advance of science.”

So:

- Similarly as for *geometry* science has shown: $\nexists$ (space is Euclidean)
- “Psychology” might show: $\nexists$ (structure of our mind is . . .)

The Modal Objection

Strawson tried to circumvent this problem by considering it as analytic.

Statements like 2 are about the use of our notions in our conceptual frameworks.

The Verificationism Objection

The verificationism objection was raised first by Barry Stroud (1968).

He argues that, in principle, a sceptic can always reply that merely appearance or belief that something is true suffices.

At best, so it seems, transcendental arguments demonstrate how things *must appear* or what we *must believe*, but not how things *must be*.

To avoid idealism, one needs to fill the gap between how things appear and how things are by embracing some form of verificationism or positivism:

$$\text{appearance} = \text{object}$$

Since this objection is about particular instances of transcendental arguments, it is particularly about the internal structure of X and Y .

We do not want to zoom into X and Y , so we skip this objection afterwards.

The Uniqueness Objection

The uniqueness objection traces back to Stephan Körner (1969 and 1974). It stresses the assumption that there is a unique conceptual scheme serving as a precondition.

Körner:

“If we grant the possibility of showing that some categorial framework must be employed in everybody’s objective thinking, we do not for this reason have to grant that the accepted categorial framework is the only available, or possible, categorial framework. (In a similar manner, we grant the possibility of showing that we must drink some liquid if our thirst is to be quenched, without granting that lemonade is the only available, or conceivable, liquid.) The transcendental deduction of a categorial framework thus presupposes – or, if we prefer, includes – a demonstration of its uniqueness.” (Körner 1979, pp.214f)

Note that this objection is against *uniqueness* (via $\vdash\!\!\!\dashv$) of our schema.

Three Main Objections

We will discuss two of these objections after characterising transcendental *only*-argument as a species of abduction:

- i the *modal objection* regarding $\Box$
- ii the *verificationism objection* (only relevant w.r.t. particular instances)
- iii the *uniqueness objection* regarding $\vdash \neg$

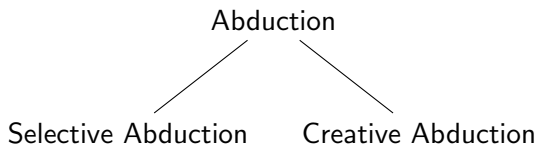
Note, that we provided also an explanatory-interpretation of $\Rightarrow$ in our schema.

We will also argue for this in our following embedding.

Abductive Reasoning

Abduction

Abduction is an important inference method in science.



- **Selective Abduction (IBE):** aims at **determining the best** hypothesis from a set of available candidates (Lipton 2004; Niiniluoto 1999)
- **Creative Abduction:** inference method for **generating hypotheses** featuring new theoretical concepts on the basis of empirical phenomena (Douven 2018; Schurz 2008)

Characterisation of Abductive Reasoning

Here we focus on *abduction* = *inference to the best explanation*.

Peirce (CP 5.189):

- ① The surprising fact, E , is observed.
- ② But if H were true, E would be a matter of course.
- ③ Hence, there is reason to suspect that H is true.

Note the structure: It is similar to *affirming the consequent*.

Characterisation of Abductive Reasoning

Today, selective abduction is mainly considered comparatively.

Main idea: Given $H_1, \dots, H_n$ separately explain E , then choose *best* H_i .

Two conditions for *best explanations*:

- Maximise the data's plausibility in the light of the inferred laws:
 $Pr(\text{explanandum } E \mid H \text{ explanans})$
- Maximise *simplicity* = minimise complexity

Embedding of Transcendental Arguments

Recall the schema of transcendental arguments:

- ① Y
- ② $\underbrace{\Box(X \Rightarrow Y)}_{\text{existence}} \ \& \ \underbrace{\text{for all } Z(\Box(Z \Rightarrow Y) \rightarrow Z \vdash \bot X)}_{\text{uniqueness}}$
- ③ Hence, X

Compare this with the Peircean schema:

- ① E
- ② $H \Rightarrow E$
- ③ Hence, H

Sloppily (2): X/H is the only conceivable explanation for Y/E .

Hence, for trivial reasons *IBE*-abduction selects X .

$$\lim(IBE) = TA$$

$$\infty$$

Argumentation for Explanatory $\Rightarrow$

Why do we think that $\Rightarrow$ should be considered as explanatory?

There are several indicators **I**.

I1: Many important problems and questions tackled by Kant are *how*-questions as, e.g.:

“How is metaphysics as a natural predisposition possible?” (B22)

Such questions are, if rephrased as *in what way*-questions, questions asking for an explanation (cf. Cross 1991, p.248).

Since Kant's account is by help of transcendental argumentation, such arguments should provide an explanation. Hence, the explanatory $\Rightarrow$.

Argumentation for Explanatory $\Rightarrow$

12: Secondary sources, when discussing transcendental arguments and deduction, quite often use a lot of *explanatory*-talk as, e.g.:

“Kant explains how pure reason generates ideas of metaphysical entities such as the soul, the world as a whole, and God[.]” (cf. the intro of Paul Guyer and Allen Wood to Kant 1787/1998, p.5)

In general, Guyer and Wood's introduction accompanies *possibility*-talk in about one third (23 out of 64) of the cases by *explanatory*-talk.

Also, we find implicit *explanatory*-talk when authors use notions which are commonly related to explanations:

*“One very striking feature of many transcendental arguments is their constant reference to the possibility of experience, or to the **unity** of experience, or to what we can understand or make intelligible to ourselves.” (Wilkerson 1976, p.209)*

Hence, the *explanatory* $\Rightarrow$.

Argumentation for Explanatory $\Rightarrow$

I3: Not only secondary sources use this parlance, but also Kant himself.

E.g. a note to the chapter following his *Refutation of Idealism* in his copy of the first edition says: “we cannot *explain* their possibility” (cf. note *d* of the editors to Kant 1787/1998, B300, p.341).

Also, when speaking about *transcendental deduction* in general, he posits:

*“I therefore call the *explanation* of the way in which concepts can relate to objects a priori their transcendental deduction[.]” (Kant 1787/1998, B117, p.220)*

Hence, the *explanatory* $\Rightarrow$.

Argumentation for Explanatory $\Rightarrow$

14: Modern forms of *transcendental argumentation* make this link between *preconditions* and *explaining*.

E.g.: Putnam's "transcendental" refutation of scepticism by help of his argument against the so-called *brain-in-a-vat hypothesis*: a cascade of transcendental hypotheticals (cf. Bardon 2012, sect.1):

Ascription to transcendental argumentation:

"My procedure has a close relation to what Kant called a 'transcendental' investigation; for it is an investigation, I repeat, of the preconditions of reference and hence of thought – preconditions built in to the nature of our minds themselves[.]" (Putnam 1981a, p.16).

Argumentation for Explanatory $\Rightarrow$

The Argument

- ① I can question whether I am a brain in a vat or not. $\Diamond Y$
- ② I could not question this, if I could not refer to brains in vats. $\neg X \Box \rightarrow \neg \Diamond Y$
- ③ I could not refer to brains in vats, If I were a brain in a vat. $Z \Box \rightarrow \neg X$
- ④ Hence, I am not a brain in a vat. $\neg Z$

Note, this is a transcendental **necessity**-argument.

However, Putnam argues further, particularly for premiss 3.

For this he applies transcendental **only**-argumentation.

Argumentation for Explanatory $\Rightarrow$

He discusses (conceivable) alternatives to his **causal theory of reference**.

Putnam: All alternatives assume a “necessary connection” between names and their bearers, which is to say that they assume such a relation which is “magical” (cf. Putnam 1981b, p.3).

Hence:

*“Putnam defends this theory, on the grounds that **it alone can explain** how reference occurs in a way that is not ‘magical’, i.e., which does not assume that the connection is just somehow intrinsic between representations and their referents” (Stern 2020, sect.1).*

Hence, *uniqueness* (complementary to premiss 3).

Hence, we find the **explanatory** interpretation of $\Rightarrow$ again.

Ad Modality Objection

For Kant: □ was essential to “synthesise” epistemological approaches.

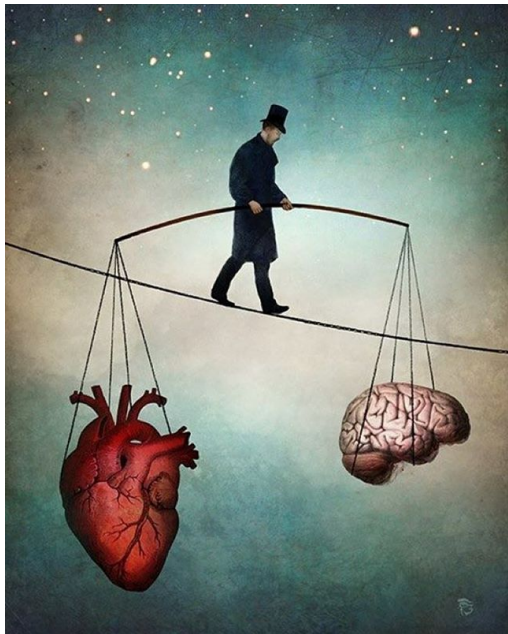
Rationalists: Stressed the importance of *a priori* reasoning regarding **matters of fact**—and not only regarding ideas.

Empiricists: Stressed the importance, even sovereignty, of *a posteriori* reasoning regarding **matters of fact**

Kant: □ brings in the **SYNTHETIC A PRIORI**.

He agreed with rationalists in the sense that he ascribed **necessity to some synthetic judgements** too.

He agreed with empiricists in stressing that our main source of knowledge regarding reality is linked to **a posteriori experience**—necessary conditions for its possibility.



Christian Schloe: *The Balance*

Ad Modality Objection

□ bringing in synthetic a priori judgements was/is not everyone's cup of tea.

Strawson, e.g., suggested: synthetic $\rightarrow$ analytic,

Hence: □ is about **analytic a priori judgements**.

There were/are, however, also more “destructive” approaches:

E.g. a Carnapian interpretation:

- We choose linguistic frameworks for constituting theories (*Aufbau*).
- Science operates on the level of internal questions and problems.
- Questions about the framework itself are external/pseudo-problems.
- E.g.: Empiricists start with some principle **OBSERVATION**.
- Asking for preconditions of OBSERVATION $\rightarrow$ pseudo-problem.

Hence, due to □, transcendental arguments are **pseudo-problem generators**.

Ad Modality Objection

More moderate is a pragmatistical reading:

“A Kantian transcendental deduction is a piece of practical reasoning, a justificatory argument legitimizing a conceptual practice. That practice is our conceptualization and reconceptualization of the world we experience and of our experiencing it through the medium of conceptual cores, most generic theories[.]” (cf. Rosenberg 1975, p.623)

Main idea: What Carnap dubbed *pseudo-problems* is just a pragmatic endeavour.

So, $\square$ is about practical reconceptualisation.

(This brings transcendental arguments closer to Carnap than to Kant.)

Ad Uniqueness Objection

We said that this is basically a concern about the relation of (explanatory) equivalence ($\vdash\!\!\vdash$) of our schema.

It seems that Körner has a strong notion of *equivalence* (absolute optimisation or maximisation) in mind: What is, objectively speaking, the best way to quench thirst?

The abductive methodological stance employs a much weaker notion of equivalence (relative optimality).

Whatever serves best (IBE) among all available ways to quench thirst, wins.

(Again, this shifts transcendental arguments away from Kant's approach.)

Ad Uniqueness Objection

One can *squeeze* the *transcendental* in *transcendental* argument a bit more.

Rosenberg (1975, p.618): “Kant was always interested in the application of concepts with respect to *all possible* experience.”

If one hypothesises (or speculates) about a “*limiting case*” of the re-engineering of our conceptual framework, one might cover the thought of employing all “possible experience”.

Thinking this way might fit well with Kant’s parlance of a *regulative idea*.

Rosenberg (1975, p.623):

“If all this seems somehow terribly familiar, well of course it is. For a giant has walked this path before me, and giants leave deep footprints. In the setting of evolutionary naturalism, a transcendental deduction is no different from a Peircean abduction, nor is the integrative synthesis of our experience as of a unified world anything other than what Peirce called “the fixation of belief”.”

Ad Uniqueness Objection

Peirce' Fixation of Belief:

"Inquiry properly carried on will reach some definite and fixed result or approximate indefinitely toward that limit." (1.485)

"The opinion which is fated to be ultimately agreed to by all who investigate, is what we mean by the truth." (5.407)

Kant-Style Fixation of Concepts:

Inquiry properly carried on will reach some definite and fixed result or approximate indefinitely toward that limit.

*The **concepts** which are fated to be ultimately agreed to by all who investigate, is what we mean by the **categories**.*

So, there is a way to satisfy *uniqueness* (via $\vdash\vdash$): Abductive comparison.

And there are ideas of how to "*transcendentalise*" this.

Summary

We distinguished between ...

- transcendental **necessity**-arguments (logical)
- transcendental **only**-arguments (explanatory)

Transcendental only-arguments are particular instances (**limiting case**) of abductive reasoning.

We argued for our IBE-interpretation of **only**-arguments by:

- discussing *de facto* explanatory-characterisations of $\Rightarrow$
- providing an instrumental/pragmatist reading of $\square$
- providing also such a reading of $\vdash$

There is a truth-apt interpretation of all abductive ingredients (ad Ansgar).

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Q&A

February 1, 2019, *The Possibility of Metaphysics*

- Q1 Isn't Strawson's modality-objection vs. modality in $\Box \rightarrow$ (necessity-arguments)?
- Q2 How about the modality in $\Diamond Y$ (Putnam)? Is there a better link than $X \Box \rightarrow \Diamond Y$? Why not using a strict conditional $\Box(X \rightarrow Y)$?
- Q3 Is Putnam's argument really logically valid (isn't transitivity involved, which does not hold for $\Box \rightarrow$)?
- Q4 There are two forms of transcendental reasoning:
 - $\Diamond Y$ (analytically) entails X —here Strawson's interpretation of $\Box$ as analyticity works.
 - But we can also begin with X and reason, starting from X , why Y is the case. How about this form of transcendental reasoning?

Q&A

- Q5 How about turning an only-argument to a logically valid argument along the following lines:
- Y
 - There is an explanation of Y
 - X is the only possible explanation of Y
 - Hence, X
- Q6 Sometimes IBE-reasoning is used in transcendental arguments. E.g.: Orbit of Uranus explained by IBE to Neptun-hypothesis. How to provide a reduction there?
- Q7 Suggestions for further references:
- Apel (also limiting case idea for framing pragmatism as transcendental reasoning)
 - TA as Abd: Grundmann in *Warum Kant heute?*
 - TA and explanatory-talk in: Ameriks (1978): *Kant's Transcendental Deduction as a Regressive Argument*

Q&A

May 31, 2019, *The Return of the Kantians*

Q1 Ad talk of Marcel Buß: How does the abductive reduction fit to Kant?

“The direct or ostensive proof is, in all kinds of cognition, that which is combined with the conviction of truth and simultaneously with insight into its sources; the apagogic proof, on the contrary, can produce certainty, to be sure, but never comprehensibility of the truth in regard to its connection with the grounds of its possibility.” (B817)

Note, abduction is apagogic/indirect: IBE in form of

$$\{\cancel{H_1}, \cancel{H_2}, \dots, H_i, \dots, \cancel{H_{n-1}}, \cancel{H_n}\}$$

Possible answer: As Marcel argued, Kant seems to be/should be more concerned about constructive/non-constructive instead of direct/indirect.

Q&A

🔗 Ad talk of Robert Stern: *The Achilles' Heel of Transcendental Idealism*:

How to justify □(structure of our mind is such and such)?

Isn't this the so-called *modal objection* (cf. Bardon 2012, sect.2)?

"One general objection commonly raised against transcendental arguments concerns the very type of necessity transcendental arguments rely upon. Transcendental arguments characteristically center on a claim to synthetic a priori knowledge. Take, for example, Kant's claim that the experience of enduring objects undergoing alteration is a precondition of subjective time-consciousness. This claim is neither grounded in experience nor follows from the meanings of the terms involved. He does provide some (often rather obscure) reasoning to support this claim, but that support, again, typically involves claims to synthetic a priori knowledge. Such claims have been portrayed as [①] ultimately relying on a mysterious faculty of philosophical intuition."

Strawson avoids this problem by aiming at ② analytic □-claims.

Q&A

Also possible: ③ IBE justification of such $\square$ -claims—problem: regress

I want to add: bootstrapping problem (justification from $\emptyset$):

- Start with problem P (e.g. synthetic a priori)
- Propose theory T for solving P (e.g. trans. ideal.)
- Someone finds new problem Q , a idiosyncrasy of T (e.g. $\square$ modal/Achilles' Heel objection)
- Application of IBE:
 T 's success w.r.t. $P \Rightarrow Q$ no vice, but virtue of T
- ... basically for any Q



Q&A

