

# *On the Varieties of the Distinction between the Context of Discovery and the Context of Justification*

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## 1. INTRODUCTION

Starting point: A paper of mine, published in *Studies in History and Philosophy of Science* 18: 501-515 (1987) on the context distinction (from now on: "the DJ distinction")

Here: Rehearsal of some of the topics of that paper, plus some additional thoughts

## 2. GENERAL LINE

### MAIN THESIS:

The DJ distinction, as it is used in the 60s and 70s, is

- not just one distinction, but
- an open set of intermingled distinctions such that
- due to the conflation of various distinctions, the statement of the DJ distinction contains hidden identity statements among these distinctions, which results in
- massive philosophical assumptions,
- which are highly problematic

### CONSEQUENCE:

Much of the discussion of the DJ distinction in the 60s and 70s is fairly muddled because it is not clear what exactly is stated by its defenders and what exactly is attacked by its critics

And this is why all parties turned away from the discussion after a while in the 70s, all being somewhat frustrated

Earlier historical details of the DJ distinction will be treated in the talks by Jutta Schickore, Gregor Schiemann, and Friedrich Stadler

## 3. THE VARIETIES OF THE DJ DISTINCTIONS

### VARIANT I:

Discovery and justification as *temporally distinct processes*

In this variant, the DJ distinction states a difference between defining properties of historical processes

In addition, it is typically assumed that there is a temporal order of these processes: first the process of discovery, then the process of justification (for Popper almost analytically so)

Criticism 1: Phases of discovery and of justification may alternate; history is not that clean but much messier. Granted by (some) proponents

Criticism 2: Ask the question whether a particular element of a historical process counts as part of the discovery process or as part of the justification process

Example: A more precise measurement of some empirical law

Defense 1: Yes, the contexts may "overlap"

Defense 2: Yes, "the process of discovery and the process of justification may be nearly identical" (Salmon 1970)

Result: DJ distinction as a distinction between temporally distinct processes does not work

But much of the criticism of the DJ distinction focused on this variant (e.g., Feyerabend)

More on this variant of the DJ distinction in the talks by Theodore Arabatzis and Friedrich Steinle

#### VARIANT 2:

*Process of discovery vs. methods* (in a wide sense) of justification (or testing)

Here we have a contrast between a factual historical process and methods, considerations, etc. that are relevant to establish (test) knowledge claims

The latter part, however, is ambiguous:

- methods of justification that were used at the historical time (probably the preferred reading by historians)
- methods that "really" establish knowledge claims, independently of what historical actors believed (probably the preferred reading by philosophers)

Problems of the first reading: distinction of historically used methods of justification from elements of the process of discovery (compare process variant of the DJ distinction)

Second reading: Justification (testing) *normatively* (or *evaluatively*) understood: how it ought to be done if done properly

Thus: DJ distinction becomes a special case of the descriptive vs. normative distinction

Question: Are the norms invoked timeless (if yes: why?) or are they subject to historical change (if yes: how?)?

#### VARIANT 3:

Analysis of discovery as *empirical* vs. analysis of justification (testing) as *logical*

In this variant, the DJ distinction states a methodological difference on the meta-level (relative to an object-level of historical processes)

This variant is a methodological specification of variant 2, second reading, namely a process of discovery vs. normative methods of justification:

Descriptions have to be found empirically, normative evaluations have to be done logically

This variant implies that at least an essential part of a normative evaluation is time-independent

#### VARIANT 4:

History, psychology and sociology of science vs. philosophy of science

In this variant, the DJ distinction states a methodological difference between meta-sciences and is a mapping of variant 3 into academic fields

Empirical disciplines deal with the process of discovery, philosophy (of science) deals with logical analysis of justification (testing) and is normative

VARIANT 5:

Various authors introduce the DJ distinction as a distinction between *different questions*, e.g. "What has happened historically during this discovery?"

"Is a statement testable? Can it be justified?"

In this variant, the DJ distinction notes a difference between questions asked from the point of view of the meta-level

Most of those authors do not pay attention to the fact that they introduced the DJ distinction as a distinction between questions; this fact seems to be irrelevant

I will come back to this observation

Note that

- variant 1 of the DJ distinction operates on the object level: different kinds of historical processes
- variant 2, first reading, operates on the object level: discovery processes and historically used methods of justification
- variant 2, second reading, mixes object and meta-level: discovery processes vs. normative reconstruction of justification
- variants 3 to 5 operate on the meta-level: different kinds of analyses, or meta-disciplines, or questions

#### 4. SOME HIDDEN ASSUMPTIONS

To make life simpler, let us assume that the DJ distinction as a distinction between successive processes is dead

What is implied in the conflation of the variants 2 to 4 of the DJ distinction?

The conflation implies *substantial theories about discovery and about justification*, respectively

Let us look at discovery and justification sides in turn

*Discovery side:* Characterization of the process of discovery as subject to empirical investigation only (by psychology, history, etc.) and thereby excluding philosophy from this domain

There are two variants of this assumption:

- process of discovery has no features that can be subjected to any sort of non-empirical analysis (i.e. no "logic of discovery" or "rational heuristics")
- whether there are such features or not is irrelevant because philosophy has to deal with normative questions of justification only

This assumption was attacked by champions of a "logic of discovery" (Hanson, e.g.)

Arguments:

There may indeed be structures of discovery that may be subjected to logical analysis; any assumption to the contrary is ungrounded

Why should philosophy be reduced to only dealing with normative questions of justification?

*Justification side:* Methods of justification (testing) as logical and as the province of philosophy of science

This reflects the program of some representatives of logical positivism (empiricism): philosophy as logical analysis of language

Justification (testing) of X becomes the analysis of logical relations between X and other propositions, mainly basic (protocol) sentences

This is by no means a philosophically innocent assumption

Important consequence:

Disagreement about justification can only arise out of disagreement about basic sentences (which is impossible in early logical positivism), or disagreement about conventions, or error

Under these circumstances, a *rational disagreement about justification* is impossible

Consequence: The justificatory part of science is a one-person-game, i.e., there is no fundamental role for scientific communities

## 5. KUHN'S OBSCURE CRITICISM

History [...] is a purely descriptive discipline. The theses [of SSR] are, however, often interpretive and sometimes normative. Again, many of my generalizations are about the sociology [...] of scientists; yet at least a few of my conclusions belong traditionally to logic or epistemology. [...] I may even seem to have violated the very influential contemporary distinction between the "context of discovery" and "the context of justification". Can anything more than profound confusion be indicated by this admixture of diverse fields and concerns? (SSR, pp. 8-9)

For many years, I took [this distinction and others] to be about the nature of knowledge [...]. Yet my attempts to apply them [...] to the actual situations in which knowledge is gained, accepted, and assimilated have made them seem extraordinarily problematic. Rather than being elementary logical or methodological distinctions, which would thus be prior to the analysis of scientific knowledge, they now seem integral parts of a traditional set of substantial answers to the very questions upon which they have been deployed. (SSR, p. 9)

A little (unimportant) personal note:

Given these remarks, I wanted to make Kuhn's criticism of the DJ distinction a central piece of my reconstruction of his theory because it seemed to mark a fundamental difference of his theory to the tradition before him

But Kuhn told me in 1984 that I shouldn't do that because the passage was only a "throw away remark" suggested to him by Stanley Cavell, in order to deal with expected criticism of SSR by philosophers of science

This is confirmed by the fact that in the first draft of SSR ("*Proto-Structure*"), finished in the fall or early winter of 1960 and distributed to some people, the two paragraphs on the DJ distinction are not yet there, and that SSR contains a telling acknowledgement to Cavell (p. xi)

What does Kuhn mean by saying "the DJ distinction (and others) seem integral parts of a traditional set of substantial answers to the very questions upon which they have been deployed"?

I think that he alludes exactly to the second hidden assumption mentioned:

The traditional DJ distinction is not philosophically neutral but incorporates a substantial view about justification, namely its logicity

Kuhn's own view of justification is different: he thinks that a good justification has to have recourse to communal, but individually differing cognitive values

We will get more on these questions in the talks by Don Howard and Thomas Sturm

## 6. CUTTING THE GORDIAN KNOT

For analytical purposes in philosophy, it often seems desirable to draw distinctions that are as impartial as possible because philosophical theses should be explicitly articulated and not hidden underneath some distinction

The traditional DJ distinction falls short of this posit as it is highly biased towards logical positivism (empiricism)

What would be a lean, broadly applicable and fruitful DJ distinction?

It seems to me that the core of the DJ distinction is the difference between a perspective towards facts (descriptive) and a normative-evaluative perspective

A perspective is a particular, active way of looking at something, active by singling out certain aspects of the thing looked at and neglecting others

The choice of a perspective is well-expressed by a question, in our case:

- What has actually happened during that particular period? (factual)
- Is this or that statement (or utterance, etc.) justified? (normative-evaluative)

The two perspectives are launched by these questions; the existence of their contrast appears indubitable (even Feyerabend admitted that in private conversation)

Remarks:

1. The mere contrast between these questions does not commit to any assumptions about the nature of facts (or description) nor about the nature of justification

Thus: The contrast is very lean; in particular, it is neutral with respect to different theories about discovery and about justification

2. Different questions may have the same answer, without endangering their difference ( $5+4=?$ ;  $3\cdot 3=?$ )

Thus: The process problem of the DJ distinction (overlap of the processes, etc.) is a pseudo-problem

3. The distinction between the two perspectives is not meant to be exhaustive

Thus: There is space for the intentions of those critics of the DJ distinction who claimed that the distinction should be expanded to be threefold or fourfold. They are bringing up particular perspectives that can be rephrased as additional questions

## 7. RESULT

Roughly speaking, all parties in the discussion of the 60s and 70s were partly right, but they were heavily on cross-purposes:

- The critics of the DJ distinction either attacked the process version or the conflation of different distinctions, i.e. the positivist program (which is legitimate)
- The defenders of the DJ distinction mainly defended the contrast between the two perspectives involved (which is legitimate)

Look at this telling testimony of despair by Herbert Feigl documenting a failed discussion:

“I was astonished that such brilliant and knowledgeable scholars as N.R. Hanson, Thomas Kuhn, Michael Polanyi, Paul Feyerabend, Sigmund Koch *et al.* consider the distinction invalid or at least misleading.” (1974)

“I confess I am dismayed by the amount of – *it seems almost deliberate*–misunderstanding and opposition to which this distinction has been subjected in recent years.” (1970, italics added)

Let us hope that we will fare better in our workshop!

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