

EPSA, Athens, 7 October 2011
PSE Symposium
“New Challenges for Philosophy of Science”

Dissensus in science as a fact and as a norm

Daniel Andler

<http://andler.dec.ens.fr/>

UFR de philosophie et sociologie, Université Paris-Sorbonne

Institut universitaire de France

Département d'études cognitives, Ecole normale supérieure

Outline

- The rise of dissensus
- Grounding dissensus:
 - dissensus as a feature of objective (impersonal) states of scientific knowledge
 - dissensus as a ineliminable (and functional) feature of science

I. Dissensus:
the rise from obscurity

The majority view

Three main positions:

1. the classical strict rationalist logico-positivist view (= the Founding Fathers' View)
2. the constructivist/sociological non-rational view (the Bad Sons' View)
3. the amended rationalist post-positivist view (the Good Sons' View)

The Fathers' View

Dissensus happens only as brief episodes—epistemic accidents at it were—caused by error or blocked access to the full set of available evidence. They belong to the context of discovery and leave no enduring mark on science. Science would remain essentially unchanged and intelligible if dissensus disappeared from the history (actual processes) of science.

The Bad Sons' View

Dissensus is the natural state of science in the making, and yields only to political force exerted by one camp, deploying a mix of rhetorical and institutional maneuvers, either at the time of discovery (science in the making) or at the time of evangelical reconstructions (at the stage of pedagogy, for both lay and professional audiences).

The Good Sons' View

Dissensus is an enduring feature of science: it plays a role in its development and leaves a mark on its history.

However it only reflects the imbalance between the complexity of the world and our cognitive abilities: science is hard and makes consensus—getting to a unanimous ‘yes’—a protracted process. Dissensus is thus just a fact of life, or, at best, has instrumental value (an antidote to dogmatism and error, a heuristic device...). Scientists aim at, and achieve consensus, either of the Fathers’ type or pluralistic.

Dissenting minority

Rescher (*Pluralism: Against the Demand for Consensus*, 1993), Miriam Solomon (*Social Empiricism*, 2001) reject the primacy of consensus: dissensus is not only legitimate and essential to the real, historical process of science, but epistemically on par with consensus.

II. Putting consensus and dissensus on an equal footing

TWO STEPS BEYOND THE SOCIAL APPROACH

Step 1: Going impersonal

- Changing spaces: from the interpersonal (Lavoisier vs Priestley) to the impersonal-social-collective epistemic entities (such as: [impersonal] beliefs, rules, practices...)-rather than (complete) individual states or sets/ distributions thereof.
- From an internalist to an externalist notion of con/dissensus: a property of collective epistemic states.

Degree of consensus, local harmony

- The space is that of impersonal/collective epistemic entities (such as: [impersonal] beliefs, rules, practices...)-rather than (entire) individual states.
- Degree of con/dissensus: To each subset of the space is attached a measure of 'harmony' -a theoretical term, which can only indirectly be appraised by the theory (of science).
- The pull towards consensus: a harmony-optimizing mechanism operating locally (with self-organizing formation of areas with different degrees of dissensus).

The majority view, amended : objectified & sophisticated

Social scientific knowledge [SSK], which includes statements, theories, practices at the object and the metalevels, can be characterized by a set-theoretic degree of regional con/ dissensus (harmony). Over time, SSK is subject to a dissensus-reducing (harmony maximizing) dynamics that results in the formation of areas with relatively low regional dissensus (high harmony). Outside such areas, dissensus may (and does in the short or medium-term) remain sizeable (harmony remains low). However, in the limit, pockets of dissensus are eliminated.

Dissensus

- In this perspective dissensus (less than maximal harmony) appears, Leibniz-style, as the by-product of (blind) regional pull towards consensus (maximal harmony).
- The view just sketched does not show that dissensus is inevitable (although it makes it plausible), and of course it says nothing about whether dissensus in fact is a permanent (as opposed to still-present-but-vanishing) feature of science.

Step 2: Letting go of the 'completeability-in-the-limit' assumption

- *The CLA.* There is a set of empirical facts regarding the world that can be gradually become known and integrated into our theories, which expand accordingly, so that science will provide in the limit an essentially complete account of the empirical world.
- *CLA in favor of the Amended Majority View:* As facts continue to roll in, areas of consensus (high harmony) expand and eventually gobble up the neighboring high-dissensus (low harmony) areas, leading to a unified picture or at least to a map with a small collection of consensual areas.

CLA and VD

Is it true that

$$\text{CLA} \Leftrightarrow \text{VD} ?$$

(where VD is vanishing dissensus, or consensus in the limit)

Of course $\text{CLA} \Rightarrow \text{VD}$ (equiv $\text{notVD} \Rightarrow \text{notCLA}$)

But $\text{VD} \Rightarrow \text{CLA} ??$

Reconfiguration of science and the function of dissensus

- An incompleteable science, unlike a completeable puzzle which is increasingly rigidified by its identified fragments, is bound to be in perpetual reconfiguration (although certain parts do remain essentially fixed).
- Dissensus allows a scientific field to recover more swiftly: it has an essential function in the dynamics of science.

A final question

Two kinds of mechanisms?

- mechanisms of dissensus at the personal/interpersonal level (*eg* organized scepticism, originality requirement, 'gladiator' stance, diversity of epistemic position and temperament...)
- mechanisms of dissensus as global dynamics of consensus-dissensus topology?

What is the relation?

A special case of the general question: How do the internal/individual, conscious, deliberate... and external/supra or infra-individual, non conscious, unwilled factors combine?

The central problem for social epistemology of science?

The End