



ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ

Εθνικόν και Καποδιστριακόν  
Πανεπιστήμιον Αθηνών

— ΙΔΡΥΘΕΝ ΤΟ 1837 —

Τμήμα Ιστορίας και Φιλοσοφίας της Επιστήμης  
Τομέας Φιλοσοφίας και Θεωρίας της Επιστήμης και της Τεχνολογίας

## ΣΕΜΙΝΑΡΙΟ ΔΙΔΑΣΚΟΝΤΩΝ

Σειρά διαλέξεων ανοικτών σε όλους  
τους διδάσκοντες και φοιτητές του ΕΚΠΑ

### Vanessa Seifert: «Metaphysics of Chemistry: What are chemical reactions?»

Τρίτη 23 Απριλίου 2024, 19.00

Νέο Κτήριο ΙΦΕ (ισόγειο)

#### Περίληψη:

I consider whether chemical reactions can be understood as causal relations by examining three features to them. The first concerns reaction mechanisms; the second equilibrium states; and the third catalysis. From their analysis I conclude that establishing reactions as causal relations is far from obvious. First, the prevalence of reaction mechanisms suggests that a mechanistic account of causation is plausible for chemical reactions. Nonetheless, a typical reaction isn't an event where chemical substances irreversibly transform into other substances (just like- say- a rock would irreversibly cause the shattering of a window). Instead, it is a dynamic process which- once reaching equilibrium- results in a state where the system transforms into the products and reverses back into the reactants. When viewed from the perspective of causation, this suggests that reactions exhibit causal loops and as such they either shouldn't be considered as genuine causal relations, or they pose a challenge for those accounts of causation that require the temporal priority of causes. Moreover, the presence of catalysts can be said to partly cause a reaction (as their absence often explains why a reaction doesn't take place), even though they don't substantively participate in the reaction (because they don't transform into products). So, it is unclear whether they should be construed as genuine causes or part of the environment which accommodates a reaction's realisation. While I do not offer an answer as to these puzzles, this analysis shows that construing reactions as causal relations is far from uncontroversial. Some features to reactions offer evidence for understanding them as causal relations, yet others make the question around their precise nature quite hard to answer.

**Το πλήρες πρόγραμμα διαλέξεων του ακαδ. έτους 2023-24:**

- 7.11.2023 Alex Paseau: «The Euclidean Programme»  
12.12.2023 Ερμής Πλευράκης: «Ο Χέγκελ και οι θετικές επιστήμες»  
9.4.2024 Αριστείδης Χατζής: «Οι “απόλυτοι βάρβαροι” ως θύματα:  
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23.4.2024 Vanessa Seifert: «Metaphysics of Chemistry: What are chemical reactions?»  
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