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# Three tales of marketization

The role of publication programs in the entry into an era of articlization in chemistry

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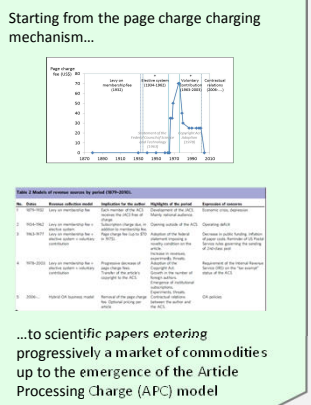
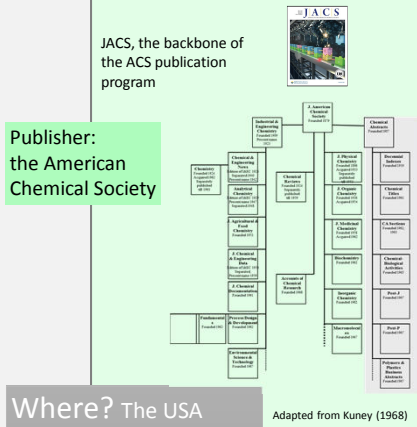
## Background and context

Work on the emergence of disciplines or research fields, whether recent (Kastenhofer and Molyneux-Hodgson 2021) or older (Lemaine et al 1976), often uses journals, as well as conferences, as reflections of scientific activity. In these instances journals are seen as historical sources rather than historical phenomena in their own right. With a few notable and recent exceptions (Baldwin 2015; Csiszar 2017; Tesnière 2021; Fyfe et al. 2022), the existence of periodicals is taken for granted, without their existence being seen as requiring explanation (Secord, 2009: 444). Aside from work on the history of the book or the press, the transmission of knowledge in print is generally considered to be relatively transparent.

## Purpose and objectives

- Our purpose is to examine the conditions for the development of a "publication program" that is not a major technological program but a mundane publication infrastructure (= the complex set of operations that consists in publishing, i.e. editing, producing and printing periodicals) in chemistry.
- We consider that chemistry journals are part of the "international machinery" of chemical information (Hepler-Smith 2015).
- The poster which aims to bring together **historical and contemporary approaches**, is based on 3 separate empirical studies. We make a slight detour via Open Access policies and do not concentrate on knowledge production but on the **conditions of trade** and propose 3 tales of marketization.

### A trajectory of market entry for scientific articles in chemistry



The notion of European chemistry was shaped in relation to the extra-European world (the USA)  
**Comparison**

### Creation of a European publication program

J.-M. Lehn Nobel Prize for Chemistry (1987)

Supramolecular chemistry as the "breeding ground" of a European chemistry

Publisher: Wiley-VCH

A tribune for the SMC advances (Concept articles)

The association with *Angewandte* ensured a large diffusion and quick visibility.

ChemPubSoc, the publishing branch of the European Chemical Society

Titles that merged when the *European Journal of Inorganic Chemistry* (EurJIC) and the *European Journal of Organic Chemistry* (EurJOC) were created in 1998

"Sacrifice" of national journals

Where? Europe  
 When? 1985-2007  
 How? Genealogy of a series of European chemistry journals. Making the linking and delinking of infrastructures visible (Misa and Shot 2005)

Where? The USA  
 When? 1879-2010  
 How? Focus on the medium. Modalities of market coordination among actors, seeing prices as social constructs.

### Publishing markets as market-agencements (Callon and Muniesa 2005, Callon 2017)

	Agencement A (Switzerland)	Agencement B (Germany)	Agencement C (France)
<b>Market devices</b>	APC (price) Visas Peer letters Reviews DOI ORCID Digital Object Identifier (DOI)	APC (price) Visualizations (APC FreeMap) ORCID	Proprietary peer-reviewed manuscript Digital Object Identifier (DOI) Open Access tracking Citation tracking Reviews, best authors (ChemRxiv top 10)
<b>Infrastructures</b>	Institutional repositories, DNA, Scopus	GitHub Python Framework and CLAP/PTP server Twitter	Co-owned by ACS, RSC, GOC, partnership with the firm Flagshare
<b>Rules, norms and conventions</b>	National guidelines (Quality standards and buying guides) (joint checks)	Call for institutions on a voluntary basis	Free submission, distribution and archive services for unaffiliated preprints in chemistry and related areas
<b>Modality of discourses, knowledge representations</b>	Services to researchers, diffusion model	Transparency, reproducibility	Inclusive scientific values: establish priority, peer review (dominate quickly), improve quality (peer reviewing before submission to a journal)
<b>Role and skills of actors</b>	Librarians (from library to bibliometrics), data scientists Licensing and service managers Calculation skills (metrics and indicators, monitoring tables, for some network analysis) Negotiation skills	Open Knowledge Foundation (Germany) actors, policy specialists, developers	Ex-publisher (former position at Nature Chemistry) & staff Scientific Advisory Board (SB members since Dec. 2018) Proximity with the community
<b>Practices</b>	Internal training in their institutions (PhD candidates and researchers) Participations in scientific congresses (B), seminars, H) and forums Blastic forum, NANO presence in European infrastructures and interdisciplinary studies	Production of documentation (PACS, instructions to submit data, new scripts, etc.)	Reporting to learned societies, participation in identity workshops/congresses. Communication on growth, development of marketing tools, buzz

### Agencement A 2013-2016



### Agencement C 2017-...



### The central place of "qualculative agencies"



### Agencement B August 2016-...

## Conclusions

Far from considering journals as archaic relics from the printing age, we suggest they could have contributed to creating an academic social order and, through the idea of program, acted as an instrument serving the discipline.

From the trajectories of financial micro-transactions, we argue that the current situation is the result of a series of small shifts and coups de force, which, combined with legal provisions governing intellectual property, have favored the irreversible entry into an era of "articlization" (i.e. scientific papers as singular entities) in chemistry.

**Question: What are the consequences of articlization for your work? (as librarian, researcher, editor, publisher, scholarly society, funder...)**