Project Milestone 2

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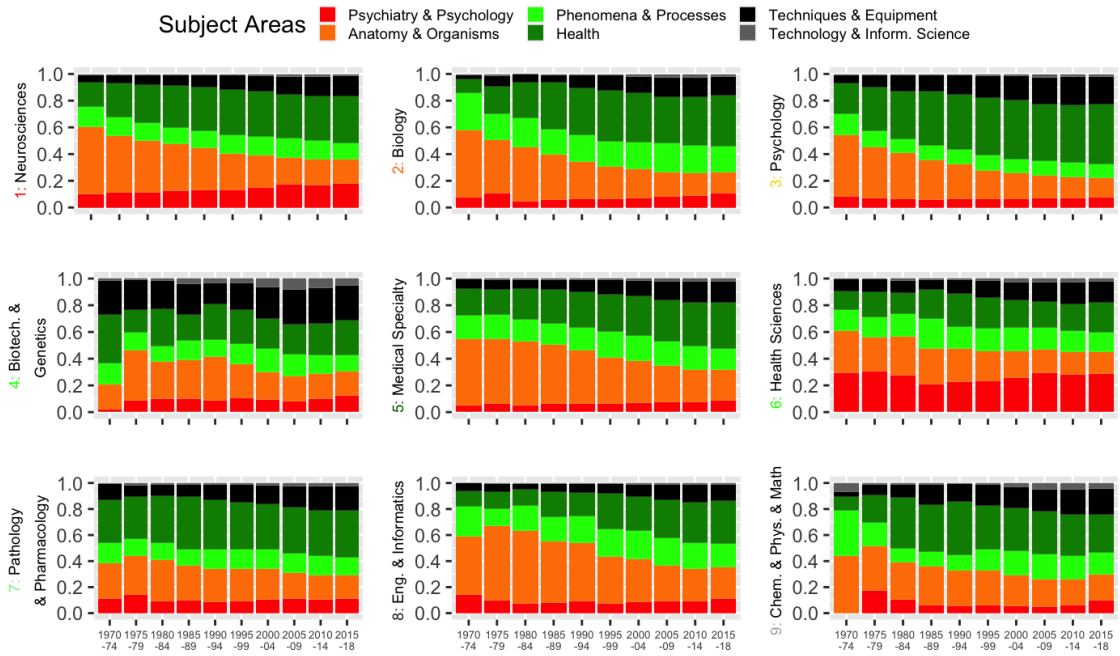
A



B

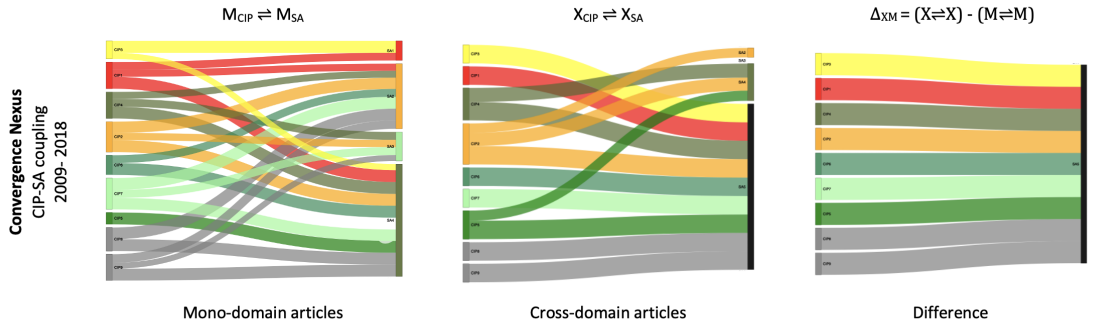


Figure 1: Evolution of SA boundary-crossing within and across disciplinary clusters.

Figure 1.A

We have created ten dataset with a range of 4years separation from 1970 to 2018 with six SA columns (SA1 to SA6) and nine CIP columns (CIP1 to CIP9).

Each of our plot in FIgure-1, represents a CIP type where each bar represents the data separated by 4 years difference. And different color in each bar represents different SA type data which In simple words, each of our nine plots belongs to nine CIP type. Each plot is divided into ten columns for ten separate year duration data subset. In each column, each color represent a normalized SA type, which is calculated by the following formula:

sum(CIP_i * SA_j) / sum{sum(CIP_i * SA_1) + sum(CIP_i * SA_2) + sum(CIP_i * SA_3) + sum(CIP_i * SA_4) + sum(CIP_i * SA_5) + sum(CIP_i * SA_6)}

Conclusion from figures:

1. Psychiatry and Psychology research increases for the Neurosciences discipline, but for other disciplines it is seen some ups and down.

2. The Phenomena and Processes research seems not to vary much for all disciplines.

3. The Technology & Information Sciences research has shown some effect in only Biotech and Genetics; and Chem. and Phys. and Math discipline.

4. The Anatomy and Organisms research shows a decreasing interest from all the disciplines.

5. The Health discipline and Techniques and Equipment discipline show an increasing interest for all the disciplines.

Figure 1.B shows Empirical CIP-SA association networks calculated for non-overlapping sets of mono-domain (M_{CIP} <-> M_{SA}) and cross-domain (X_{CIP} <-> X_{SA}) articles, and based upon the Broad configuration.