Multidimensional and Multilevel Analysis of Media Flows: Classification of Newspapers and Regionalisation of the World

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The organisation of the world is increasingly shaped by flows of people, money and information that determine to a large extent the location of states or cities within the world-system. However, these flows can also reveal the existence of intermediate organisational levels based on territorial proximity (*e.g.*, world regions) or on network connectivity (*e.g.*, global cities). In this context, *international media flows* – defined as news published by a media about a country – offers an original perspective on *soft power* (which countries are the most often mentioned in news) and on the mental divisions of the world from two complementary points of view: (1) Which medias are speaking about the same countries? And (2) which countries are over- or under-represented by the same media?

News regarding foreign events are – in most cases – intentionally reported by mass media at the international level: related events take place or involve one or several *countries*. However, one can wonder if some macroscopic regional patterns might actually arise from an analysis of international news at higher-levels. In this communication, we present an approach to understand media flows from the international to the worldwide scale. This approach first relies on the concept of *international geomedia agenda* that we introduced in a recent work [1] and according to which mass media behave as information gatekeepers deciding "which countries make the news". In this context, countries are hence "competing" for media coverage. We showed that the complete international geomedia agenda can be formalised at the microscopic level as a tridimensional object linking medias, countries, and time periods. Here, we hence propose to described this object from a graph-theoretic perspective as a *bipartite temporal network*. We also provide two data models to identify empirical irregularities within this network, depending on two complementary analysis objectives: analysing outlying *countries* relatively to (1) the mean *temporal* agenda of a given *media* and (2) the mean *media* agenda at a given *date*.

Until now, these concepts and models have only be applied to the analysis of media flows at the international scale, hence identifying outliers within a set of countries. To overcome this limitation, we propose in this communication

to apply a multilevel analysis method based on *constrained data aggregation* to provide consistent mesoscopic representations of this data [3]. As it has only been applied to simple unidimensional data sets, we generalise this approach to bipartite temporal networks [2], thus allowing the study of media flows in much more details. Contrary to classical *blockmodeling* methods that analyse social relations by aggregating individuals (nodes), our approach is more general because it directly allows the aggregation of relations (edges). We are hence able to detect many more mesoscopic patterns: any group of medias uniformly covering any group of countries on any time period. We show that, by varying the data model and the information granularity, one can build interesting insights regarding the world-scale organisation and dynamics of media flows. Preliminary empirical results suggest that structural divisions of the world by media flows can be related to various effects: (1) linguistic effects (Latin America), (2) spatial proximities and regional integrations (Asia-Pacifica, EuroMed), and (3) leadership effects (USA).

References

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